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PHYSICAL AND HYGIENIC BENEFITS OF MILITARY TRAINING AS DEMONSTRATED BY THE WAR

MERRITTE W. IRELAND, M.D.
Surgeon-General, U. S. Army
WASHINGTON, D. C.

Probably no other class of men have the vision, as medical men have, to see the good that would result from universal military training.

There never has been a real survey of the man power of the United States, but all of us know that many surprising facts would be developed if such a survey were made. The Civil War gave a certain indefinite survey at that time, but during the last fifty-five years tremendous changes have taken place in our mode of living, and the human mechanism has not adjusted itself to the changes of civilization. We have had no opportunity to judge the defects among our male population. For a long time the finger of scorn has been pointed at the Army and Navy because we had such a high percentage of venereal disease. I have been interested in this subject for a quarter of a century. The only reason we had a high percentage of venereal disease was that we knew the amount of this disease among our soldiers and sailors and published it to the world. We always knew that the rate of venereal disease did not represent the rate in the Army but did represent, to a fair degree, the rate in the civil population in the vicinity of our military posts. We do not contract venereal disease in the Army to any extent, but acquire it almost exclusively from without the military reservation. With a distinct understanding of the meagerness of the information we had at the beginning of the world war, it is most interesting to review the statistics furnished by the draft, the report covering the mobilization of nearly 5,000,000 men in the military forces of the United States (Army, Navy and Marines).

BENEFITS RESULTING FROM THE WAR

The cessation of hostilities at a period in the war when the American battle casualties had been insignificant, in comparison with the losses of other belligerent countries, offers a favorable opportunity to consider the brighter side of the war and to estimate what benefits have accrued to the nation as a whole, and to the individual soldier in particular, from calling to the colors approximately one twentieth of the entire population of the United States. These benefits are manifold and may thus be roughly classified:

1. Improvement in physical development as a result of outdoor life, good food, regular exercise and strenuous physical training.

Alertness, activity, strength, endurance and discipline, combined with a body free from disease, are the first requirements of a soldier. These qualities are largely obtained by gradual and well regulated physical training. As applied to the recruit, this training enables him to bear the hardships and to overcome the difficulties of warfare. The beneficial results of physical exercise during the training are supplemented by the outdoor life, the regular hours required, the plain, simple food, the good sanitary surroundings, and the many other features that promote the development of a high type of physical manhood. The improvement in the physical development of the young man in the Army was most striking. Our sanitary inspectors visited dozens of camps to investigate the thoroughness of the examination made on the arrival of the recruit at camp, and they made the same investigation of the soldier before his demobilization. At the first of these examinations, the inspector was greatly impressed by the stream of naked men who were awkward, narrow chested, with flabby muscles and often with a stoop. Contrasted with this picture, he was tremendously impressed by a similar line of naked men who presented themselves for examination before demobilization. They were bronzed, erect, broad-chested soldiers with fine muscular development and a characteristically alert and self-confident air. Many exaggerated statements have been made as to the gain in weight soldiers have acquired during the war. Some day these statistics will be available, but at the present time no correct statement can be made. The officer in charge of the sanitary division of the Surgeon-General's Office estimates that the average gain in weight in the first year of military service is from 15 to 20 pounds. The actual records of one company of National Guard troops under the semitropical conditions existing on the Mexican border in 1916 showed an average gain of 12½ pounds a man in nine months. Studies on this subject during the war made by the division of foods and nutrition in the office of the Surgeon-General showed in one infantry company an average gain of 10 pounds a man after four months of service, and in three artillery batteries an average gain of $6\frac{4}{10}$ pounds in six months. Another study showed $2\frac{6}{10}$ pounds gained in five weeks. There is no doubt that this gain in the soldiers' weight was almost entirely muscular tissue. It is reasonable to believe that a six months' training of the youths of our land during the year they are 19 years of age would produce similar good results from the physical standpoint.

2. Detection and cure of many obscure and latent pathologic conditions, particularly hookworm, malaria, venereal disease, tuberculosis and focal infection.

The examination of a young man for universal training would bring similar results. Many of the disabili-

ties detected would not be disqualifying for military service, but could be remedied during the period of training. Notable examples would be: painful feet, weak backs, hookworm infestation, malarial infection, venereal disease, and focal infection from diseased tonsils and diseased teeth. In the examination of the draft it was ascertained that 29 per cent. of the men had physical disabilities that were disabling for military service. A small list is given in the accompanying table. Suffice it to say, however that of the 225,000 cases of venereal disease in the Army during the war, prior to May 1, 1919, 200,000 were contracted before enlistment, that is, before the men joined the Army. This statement was made from incomplete statistics and is only relatively correct.

SOME IMPORTANT DEFECTS REVEALED BY THE DRAFT

	Per Cent.
1. Defects of feet (flatfoot, 11 per cent.)	13
2. Venereal diseases:	
During first period of draft	2.9
In later period of the draft	5.7 8.6
(Increase due to improvement in method of examination and tabulation, and also to the larger percentage of negroes inducted during the later period.)	
3. Hernia and enlarged inguinal rings	4
4. Defective vision (largely refractive errors)	3⅓
5. Defective physical development (including underweight and underheight)	3⅓
6. Organic diseases of the heart	3
7. Deformities or loss of extremities	3
8. Tuberculosis	2.50
9. Hypertrophy of tonsils	2⅓
10. Defective and deficient teeth	1⅓
11. Mental deficiency	1.25
12. Otitis media (purulent)	1
13. Hemorrhoids, varicocele, varicose veins (combined)	1
14. Goiter (simple and exophthalmic)	0.75
15. Deformities of hand	0.75
16. Cardiac arrhythmias and tachycardia	0.50
17. Asthma	0.25

3. A determination by examination of the actual physical condition of the adult male population of military age, and a consequent awakening of the nation to the necessity for efforts directed toward limiting the possibility for the continued evolution of physically defective citizens.

The examination of the registrants before Dec. 15, 1917, resulted in the rejection of 29 per cent. This was before the industrial and economic classification of all registrants had been made. After this classification had been accomplished, 14.5 per cent. were rejected by the local boards, and approximately 7 per cent. were rejected by the boards at military camps. This gives a total rejection by camps and local boards of 21.2 per cent. Forty-seven per cent. of the men examined were found to have certain defects. Fifty-three per cent. were accepted as fully meeting the physical standard, with no defects recorded.

4. Instruction in sanitation and personal hygiene gained by both precept and practice in camp. A great part of this acquired knowledge the discharged soldier will take back to his home and transmit to his family and fellow citizens.

As you know, a great effort was made at our concentration camps to provide every requisite for high-grade sanitation. Camps were models of cleanliness. An ample supply of potable water was furnished; shower baths were unlimited; sewage disposal was complete, and the best of food was provided. Every effort was made to have food properly prepared. The men were protected against flies and mosquitoes. Food handlers were examined to detect possible carriers of typhoid, paratyphoid and dysentery. Modern laundries were established. Vice and liquor selling were abolished or limited. In addition to what the soldier saw of sanitary methods at the camp, he was given instruction in sanitation and personal hygiene; he was provided with suitably fitting shoes, his teeth were examined and put in condition, and he was vaccinated against typhoid, paratyphoid and smallpox. He was frequently examined to detect incipient disease. A great part of this knowledge the soldier retained to take back with him into civil life. It will have a marked influence on his method of living, and he will transmit a part of his knowledge of hygiene to his family and neighbors.

5. Education in sex relation and in the matter of protection from the dangers of illicit sexual indulgence. This subject is of so great importance that it is given a special heading.

There is no one thing which demands greater attention from the people of the United States than does the widespread prevalence of venereal disease. The discussion of this subject has been tabued in polite society until quite recently. The examination of the men between 21 and 31 years of age developed the fact that more than 5 per cent. were suffering from manifest venereal troubles. The Wassermann test was not taken, so cases of syphilis which did not present local manifestations were not detected. The wide prevalence of venereal disease among our young men was a revelation to the people at home and I think that from now on the campaign against venereal disease will be one of the good results from the war. While the soldier was in camp he was protected in every conceivable way from venereal disease—by education, by law-enforcement, and by early treatment. The low record for venereal disease in the American Army in France was a revelation to our allies. It is believed that the education on this one subject alone will be of tremendous value to the country in the future.

6. Training in discipline and the development in the soldier of respect for authority.

Among those promoted to commissioned and noncommissioned grades, there was developed the faculty to command and exact obedience. I do not think too much importance can be laid on this subhead. I am certain it is accepted by all that in recent years the tendency of the American youth has been in the direction of disrespect for authority, whether parental, municipal or national. I think the discipline of military life has had a most wholesome effect on the American soldier, and will in a marked degree make him better material for citizenship. The experience which these men gained will be of inestimable value in civil life.

7. Protection, by vaccination, of 5,000,000 men against the danger of contracting typhoid, paratyphoid and smallpox for several years to come.

This will have a far-reaching effect on the population of the United States for many years. We have learned to control typhoid fever and have practically eliminated by sanitary measures dysentery and malaria. Even as late as the Spanish-American War, typhoid fever, dysentery and malaria filled our hospitals. During the world war those three diseases were practically negligible quantities in our sick report. Until May 1, 1919, we had only 213 deaths from typhoid fever, thirteen deaths from malaria, and forty-two from dysentery. Think of the great change that has taken place in this respect as contrasted with the Civil War and the Spanish-American War.

BENEFITS OF UNIVERSAL MILITARY TRAINING

The statements that I have made refer to the good the Army did the American soldier during the world

war. There is every reason why this good could be multiplied with the youth of the land by universal military training. It would give us a wonderful opportunity to make a physical survey each year of the youth of the land. It would enable us to detect physical disabilities that could be remedied and would make the man economically more valuable for the rest of his life. Many of the disabilities which men carry through life and which interfere with their value as citizens are remediable. At one time during the war, 10,000 cases of hernia were awaiting operation. All of these disabilities could be corrected during the period of military training. Defective vision could be corrected; men with weak feet and weak backs could be relieved. The mental defectives could be classified; the young man would be given an object lesson in discipline and be taught respect for authority—the good that could be accomplished is unlimited.

PATHOLOGIC ANATOMY OF TRAUMATIC FRACTURES OF CRANIAL BONES

AND CONCOMITANT BRAIN INJURIES*

E. R. LECOUNT, M.D.
AND
CARL W. APFELBACH
CHICAGO

This attempt to consider the injuries of the brain and cranial bones when the latter are broken by external violence is based on conditions encountered in 504 postmortem examinations made by one of us during the years 1911 to 1918. It does not include all the postmortem examinations during that period of the bodies of persons with such traumatic fractures, for in about sixty instances the measurements and other steps necessary in the interests of precision were not so detailed as in the 504 here reviewed. The patients were cared for in the Cook County Hospital or the Hospital of the House of Correction, and some postmortem examinations were of bodies of persons who were found dead or who died en route to a hospital.

SIX FUNDAMENTAL CONSIDERATIONS

Notwithstanding certain still mooted questions regarding the mechanism whereby the injuries of both the cranial bones and the brain are produced, and especially the influence a whirling motion of the falling head and body may have on the characteristics of the injuries, there are six facts that are generally accepted and need brief mention as a background for what follows:

1. There are six regions where the greater thickness of the cranial bones forms arches thicker below and gradually thinning out in the vault: one in front from the root of the nose and glabella; one behind, including the inion and the external and internal crests of the occipital bone, as well as the torcular eminence; one on each side from the external angular processes of the frontal bone and prolonged obliquely back and into the body of the sphenoid in the bones of the skull base, and finally one on each side formed by the petrous bones and continued externally in the protuberance of the mastoid (Figs. 1, 2 and 3).

2. With violence applied to the cranium, these arches hinder horizontal bending; whereas the bone between the arches can more easily bend vertically. As a result, the bone between the arches flattens the more in a horizontal plane and breaks across, the linear fractures radiating up into the vault and down into the bones of the base of the cranium between the arches.

3. With the head in motion, the brain lags behind the more rapidly moving cranium, and as a consequence is closer to the cranial bones *opposite* where violence is applied; and with the axis of the skull abruptly shortened at right angles to where violence is applied, the brain is the more bruised opposite that place.

4. The resistance (weight) of the trunk and extremities transmitted to the skull via the condyles of the occipital bone tends to bend in the bottom of the skull, especially the arches, and is one factor determining the course and distribution of the fractures.

5. When the cranial bones are broken with the head in a fixed position, contrecoup bruising of the brain is reduced to the minimum and the bruises are direct, at the place of fracturing.

6. The general direction taken by fractures which course between the arches is also well known, and is shown in Figures 4, 5, 7, 10, 19, 23 and 29.[1]

NATURE AND LOCATION OF FRACTURES

About 85 per cent. of the 504 cases here considered were simple linear fractures or linear fractures with branches; in the remainder, the bones were extensively comminuted and with some of the fragments depressed. With the bones of the cranial base involved slightly more than those of the vault, both were involved in varying degrees in all but about 8 per cent. of the 504. When grouped according to the fossae chiefly involved, with one group for the vault and one for fractures so extensive that several fossae and part of the vault as well were broken, the incidence is as shown in the accompanying table. In this table are included a few fractures partly healed or so healed that their courses could still be followed. Many of the fractures of the back fossae ran forward to end in the ethmoid bone or one of the foraminae of the middle fossae. Violence for these fractures as indicated by the scalp injuries was usually to the back of the head. Of the sixty-one fractures of the anterior fossae, seventeen were simple linear, from 2 to 5 cm. long and in the roof of one orbit. Of the extensive fractures, usually with comminution, the violence was to the back of the head for twenty-seven, to the side for nineteen and in front for four. The average of the total linear length of these fractures was 70 cm., the greatest 138.9 cm. (Fig. 19). With the vault fractures, some traumatic diastasis of sutures was not rare: in twelve of the forty-nine, part of the sagittal or its entire length was affected; in three, the coronal

LOCATION OF FRACTURES

	Posterior Fossae	Middle Fossae	Anterior Fossae	Vault	Extensive	Totals
Total number	178	166	61	49	50	504
Some depression	6	11	6	4	7	34
Mode of injury learned	130	124	51	33	42	380
Short falls	36	43	9	2	2	92
Longer falls	48	37	13	16	13	127
Street car	17	12	16	4	13	62
Automobile and autotruck	11	17	7	2	11	48
Assault	18	15	6	9	3	51
Meningitis	15	7	13	3	1	39
Healed fractures	7	6	4	1	0	18
Decompression operation	15	27	3	8	6	59

*From the Coroner's Medical Service at the Cook County Hospital.
*Aided by a grant from the Otho S. A. Sprague Memorial Institute.

1. We have made no attempt to cite from the literature, but wish to refer especially to the work of Tilmann (Arch. f. klin. Chir. **66**:750, 1902; **59**: 236, 1899) and that of M. Auvray (Maladies du crâne et de l'encéphale, Paris, 1909).

suture, and in five, one or both lambdoid sutures. As regards the meningitis, the petrous parts of the temporal bones were the portal of entry for the infection in twenty-three, the ethmoid bone in thirteen; in two fractures the opened sagittal suture with the scalp laceration, and in one the petrous bone of one side was broken and a decompression operation had been made. With thirteen of the eighteen fractures with some degree of healing, there were contrecoup bruises, and in four, direct bruises alone. With one of these healed fractures there was an abscess of the left cerebral hemisphere in front, the fracture of the right posterior fossa and no outside bruise of the brain; in other words, the abscess opposite the fracture.

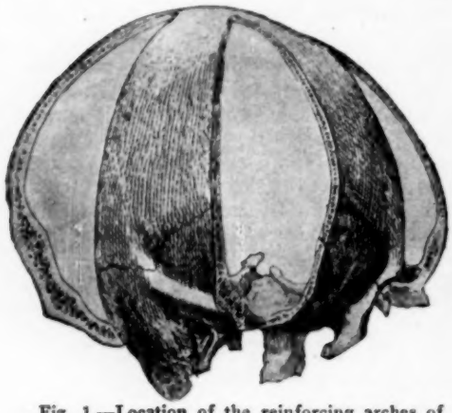

Fig. 1.—Location of the reinforcing arches of the cranium.

Fig. 2.—The thickest portions of the cranial bones are in the shaded areas.

CONCOMITANT BRAIN INJURY

The injuries of the brain concomitant with fractures of the cranial bones are preponderantly of the outside of the brain, owing partly to the inbending of the cranial bones, but chiefly to the bumping of the brain against the cranial bones. Most fractures of the cranium result from causes which first set the head into rapid motion and then suddenly stop the skull against a firm object. The brain, floating as it does in the cerebrospinal fluid, lags in the movement of the head, so much so that when the head stops moving the brain receives its greatest injury by bumping against the cranial bones directly opposite where the cranium is broken. When the bones of the temporal fossae or of the nuchal planes of the occipital bones are fractured, because of their thinness, there is frequently a bruise directly under the fracture resulting from inbending of the bone and compression of the brain. The back half of the cerebrum is larger and heavier than the front half, and because of this the front poles of the cerebrum are more frequently and more extensively bruised than the back poles. If the lateral ventricles are enlarged (internal hydrocephalus), the sides of the brain and front poles are more easily torn. As a result of these factors the frontal and temporal lobes are the most frequent site of injury; injuries of the back of the head have a large percentage of contrecoup bruises; of the sides, the next largest percentage of contrecoup bruises; and injuries of the front are more frequently associated with large direct bruises than with large contrecoup bruises.

DEGREES OF BRAIN INJURY

That the degree of brain injuries may be indicated in some way, they are roughly divided into seven groups, according to severity:

1. Severe lacerations of the brain from 4 to 6 cm. in diameter and extending into the brain 4 or 5 cm. Here there is a defect in the surface filled with clotted blood and torn brain tissue. There were fifty-four injuries of this type, and in fifteen the tear had extended into one of the lateral ventricles (Figs. 14 and 22). In thirty-nine of the fifty-four, bleeding continued intracerebrally for a few centimeters, so that in places on some of the surfaces made by coronal sections of the brain beyond the margins of the bruises of the outside there were hemorrhages inside of the brain not connected with the surface (Figs. 12, 13 and 14). Thirty-six of the latter occurred in the frontal or temporal lobes, three in the occipital lobes, usually with severe injuries (street car, automobile, high falls, etc.). There were subdural hemorrhages with all fifty-four injuries, weighing from 10 to 220 gm. All except eight were contrecoup injuries.

2. Bruises of the brain, usually wedge-shaped, in which the brain is infiltrated with blood from 2 to 4 cm. deep in a place 4 or 5 cm. in the largest outside dimensions (Figs. 25, 30 and 32). The leptomeninges covering the bruise are usually torn, the brain is lacerated from 1 to 2 cm. deep, the adjacent tissue is thickly infiltrated with blood, and the margins are edematous and dotted with petechial hemorrhages. Subdural hemorrhage is always present, but in amounts varying from a few grams up to 100 gm. Bruises of this type were the most frequent of all of the larger bruises. There were 248 in this series: 182 contrecoup and sixty-six direct.

3. Bruises, frequently with the leptomeninges intact, from 1 to 1.5 cm. deep, with little laceration of the brain tissue. There is generally hemorrhage into the brain, wedge-shaped on cross-section (Figs. 11, 16, 24, 25, 27 and 28). These are found with cranial fractures in which the trauma is usually of such a degree as might result from a short fall on a side-walk, floor, etc. They are also frequently associated with the severe injuries, mentioned above, that is, with a blow on the back of the head on the right side the large bruise will be of the left frontal or temporal lobe, while one of these more superficial bruises will be found of the right frontal and

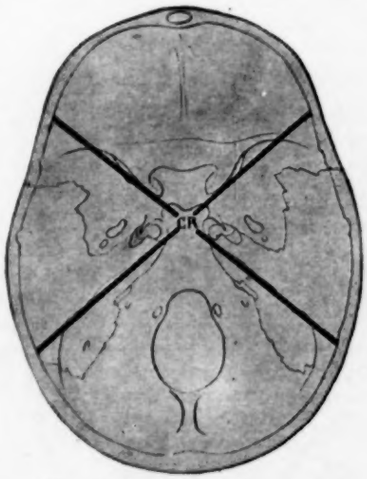

Fig. 3.—As the arches come together at the body of the sphenoid bone they are curled up at their ends; because of this, fractures radiating down into the base of the cranium course toward the body of the sphenoid bone, as shown in many of the illustrations.

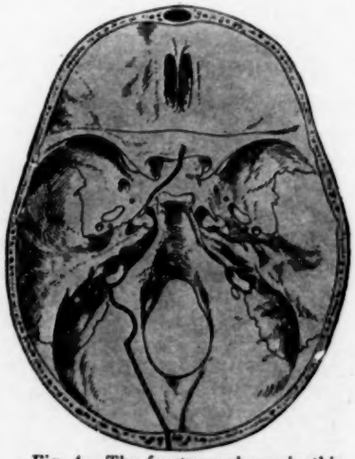

Fig. 4.—The fractures shown in this illustration and in Figures 5, 6 and 7 may be taken as "composites," that is to say, they represent conditions with extension from the vault down into the different fossae. (Figures 1, 3, 4, 5, 6 and 7 are taken from LeDentu, A., and Delbet, Pierre: Nouveau traité de chirurgie, XIII. Auvray, M.: Maladies du crâne et de l'encéphale, Paris, 1909.)

temporal lobes or of the right side of the cerebellum (Figs. 11, 24 and 25). This type of injury was present with about 35 per cent. of all the fractures. In only fifteen when these were the largest bruises present were there subdural hemorrhages with clots weighing more than 10 gm., and in only two did they weigh as much as 90 gm.

4. Superficial contusions represented by closely set petechial hemorrhages of the cortex in places from 1 to 1.5 cm. in diameter (Figs. 21, 24, 27 and 32). The meninges are intact and usually there is a little bleeding into the leptomeninges about the contusion. One or more of these contusions is usually present when the brain is severely injured, oftentimes five or six. Like those in Class 3, they are in those parts of the brain some distance away from the direct line of force (Figs. 16, 21 and 24). Some of them were the only gross evidence of direct injury of the brain.

5. Hemorrhages into the pons and medulla, chiefly the pons, centrally located, often multiple and the individual hemorrhages from 1 to 3 mm. in diameter (Fig. 18). These are usually contrecoup in location, that is to say, the fractures do not course through the bones adjacent to the brain-stem. The explanation of these hemorrhages is variously stated: contrecoup bruising, stretching of the brain away from the brain-stem because the former is more movable, and interference with the blood supply of the pons and medulla (infarction).[3]

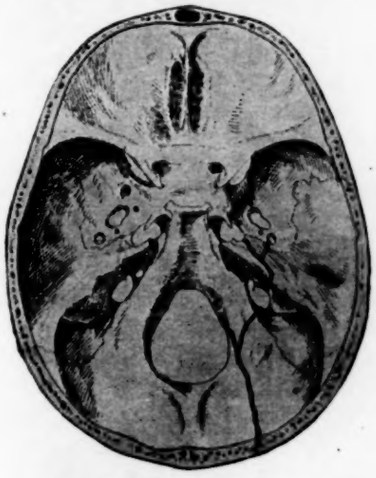

Fig. 5.—Composite fracture.

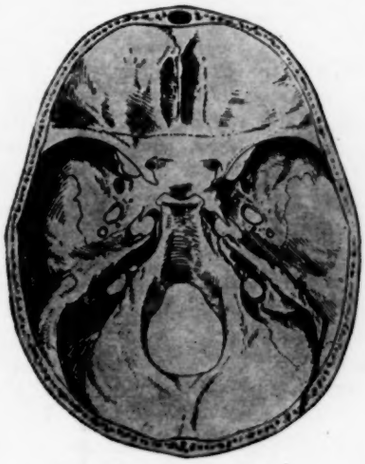

Fig. 6.—Composite fracture.

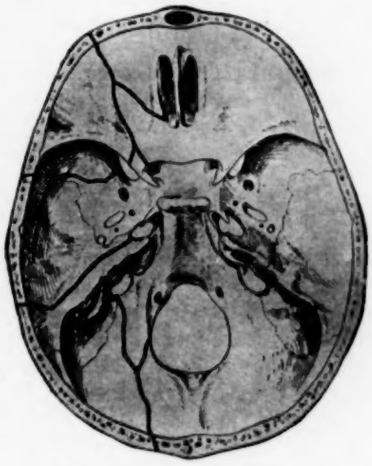

Fig. 7.—Composite fracture.

There were eighteen brains with hemorrhages in the brain-stem with fractures of the posterior fossae: in thirteen multiple, and in five a single hemorrhage from 2 to 4 mm. in diameter. In thirteen of the 166 fractures of the middle fossae, there were hemorrhages in the pons; ten of these patients lived less than one day, one three days, one seven days and one ten days. There were three with fractures of the frontal fossae, and all were associated with extensive injury of the brain. There were brain-stem hemorrhages in eighteen of the fifty extensively comminuted fractures; twelve with the violence applied behind, five of the side and one of the front of the skull. In the forty-nine fractures of the vault, there were hemorrhages in the brain-stem in five, and none of these patients lived longer than one day in the hospital.[3]

6. Small intracerebral hemorrhages, usually in the cerebral basal ganglions, from 5 to 10 mm. in diameter. There were only six of these in the 504 fractures of this series (Fig. 18).

7. Small intracerebral hemorrhages about 1 cm. in diameter, usually single, occurring when an extradural blood clot compresses one of the hemispheres. They are always in the compressed hemisphere. They were present with only four of the 104 large extradural hemorrhages (Fig. 30).

2. Greenacre, Phyllis: Multiple Spontaneous Intracerebral Hemorrhages, a Contribution to the Pathology of Apoplexy. Bull. Johns Hopkins Hosp. **28**: 312, 1917.

3. With some of these hemorrhages, sugar is found in the urine, as it is also with large spontaneous (apoplexy) hemorrhages in the pons.

INCIDENCE AND NATURE OF BRAIN INJURIES

Brain Injuries with Fractures of the Posterior Fossae.—In 149 (83.70 per cent.) of the 178 fractures, the largest bruise of the brain was contrecoup, in sixteen (8.98 per cent.) direct; and in three both the contrecoup and direct bruises were of equal extent. In the remaining ten the brain injury was slight. When the fracture was near the midline, the bruising was usually fairly symmetrical of each frontal lobe at the tips, lower outer margins and of the tips of the temporal lobes (Figs. 20, 21 and 22). With the fractures coursing more outward from the midline and forward in the posterior fossae, the contrecoup bruises were chiefly of the opposite side of the brain (Figs. 10, 11, 12 and 13). As a rule with the violence applied close to the back of the ear, the frontal and temporal lobes on that side were little if any bruised. In 159 of this 178 (89.32 per cent.), one or both frontal lobes bore bruises, tears or both; in 120 (67.41 per cent.), the temporal lobes had so suffered; in sixteen (8.98 per cent.), the occipital lobes; and in fifty-five (30.89 per cent.), the cerebellum. As already stated, the injuries of the frontal and temporal lobes were chiefly of their frontmost convolutions, undersurfaces and lower convolutions; but with the point of injury high on the back of the head, the undersurfaces of these parts of the cerebrum were chiefly bruised; with the injury at the level of the external occipital protuberance, the contrecoup bruises were chiefly of the frontal poles of the cerebrum; if at some distance from the midline, the outer margins of the opposite frontal or temporal lobes were chiefly bruised; in short, there has not been observed any noteworthy deviation from the directly opposite location of the contrecoup bruising of the brain which is such a conspicuous and important feature of the lesions accompanying the fractures.

Brain Injuries with Fractures of the Middle Fossae.—In 103 (62.04 per cent.) of the 166 fractures, the largest bruises of the brain were contrecoup, in forty-three (25.90 per cent.) direct. In the remaining twenty the brain injury grossly visible was only slight leptomeningeal hemorrhage of about equal extent on the two sides of the brain, except in a few brains which were without gross injury. In seventy (42.16 per cent.) of this 166, one or both frontal lobes bore bruises, tears or both; in 146 (87.94 per cent.), one

or both temporal lobes; in thirty-eight (22.89 per cent.), the parietal lobes; in fifteen (9.03 per cent.), the occipital lobes, and in ten (6.02 per cent.), the cerebellum. The bruises of the frontal lobes were mostly of the outer margin and undersurface. In only a few instances were the bruises of the frontal lobes deep, and then the external injury was of the back half of the parietal region of the opposite side. The bruises of the temporal lobes were preeminently of the outer margin and undersurface, depending on whether the violence was applied low or high on the vault, respectively (Figs. 23, 24, 26 and 27). One or both of the temporal lobes were bruised whenever the brain was injured.

Fig. 8 (Case 23).—An extensive, traumatic, comminuted fracture of the cranial bones with an independent fracture of the roof of the right orbit. The fracture is 53 cm. long. The scalp was bruised opposite the right mastoid region. This man, aged 52, was struck by a street car six hours before death.

Fig. 9 (Case 23).—Extensive traumatic leptomeningeal hemorrhage due to extension from contrecoup bruises of the frontal and left temporal lobes.

Bruises of the Brain with Fractures of the Frontal Fossae.—In thirty-five (57.37 per cent.) of the sixty-one, the greatest bruising of the brain was direct, in thirteen (21.31 per cent.) contrecoup. In forty-four (72.13 per cent.), the frontal lobes were bruised or torn; in seventeen (27.70 per cent.), one or both temporal lobes; in three (4.91 per cent.), one or both parietal lobes; in nineteen (31.14 per cent.), one or both occipital lobes; and in eleven (18.03 per cent.), the cerebellum. In thirteen brains there was no gross evidence of injury, and in thirty-seven of the sixty-one fractures the brain injury was slight (or no injury was present), death resulting from other causes (in nine, from meningitis; in eight, from delirium tremens; in six, from broken bones; in five, from epilepsy; in two each, from bronchopneumonia and internal injuries; and in one each, from uremia, tetanus, drowning, syphilis and so-called pachymeningitis hemorrhagica interna).

Fig. 10 (Case 24).—Typical linear fracture of the right posterior fossa resulting from the patient's falling backward and striking the back of the head on a cement floor. The patient was a white man, aged 45.

Fig. 11 (Case 24).—The location of the contrecoup tears of the left frontal and temporal lobes (Class 1), the superficial contusion of the right frontal lobe (Class 3) and the extent of traumatic leptomeningeal hemorrhage. The front half of the left cerebral hemisphere was covered by a subdural clot, and at the tears the clot was from 8 to 10 mm. thick. Altogether the subdural clot weighed about 25 gm.

Brain Injuries with Extensively Comminuted Fractures of the Cranium.—The greatest bruising of the brain in thirty-one (62 per cent.) of the fifty was contrecoup; in fourteen (28 per cent.), direct; and in five, both the contrecoup and direct bruises were equally severe. In only two of the fifty brains were the injuries slight, consisting of direct leptomeningeal hemorrhage. The point of external violence was used in deciding whether the bruising was contrecoup or direct, because some of the fractures encircled the skull, and especially through the middle fossae. In thirty-nine of the fifty (78 per cent.), one or both frontal lobes were bruised or torn; in thirty-seven (74 per cent.), one or both temporal lobes; in seven (14 per cent.), one or both parietal lobes; in eight (16 per cent.), one or both occipital lobes; and in sixteen (32 per cent.), the cerebellum. Of the twenty-seven fractures in which the violence was applied behind, the contrecoup bruising was greatest in fourteen; in four, direct; in eight, chiefly contrecoup, but the direct bruises were also large, and in one there was little injury of the brain. Of the nineteen with the violence applied to the side of the skull, in nine the contrecoup bruising was greatest, in five, direct, and in five chiefly contrecoup; but the direct bruises were also large. With the external violence applied in front, the direct bruises were greatest in three of the four, and in one the brain injury was slight.

Brain Injuries with Fractures of the Vault.—In thirty-nine (79.59 per cent.), the greatest bruising was contrecoup; in nine (18.36 per cent.), direct; and in one, the brain injury was slight. In eight of the thirty-nine brains, the contrecoup bruising was only slightly greater than the direct. The frontal lobes were bruised or torn in thirty-nine (79.59 per cent.) of the forty-nine fractures; the temporal lobes in thirty-three (67.34 per cent.); the parietal lobes in sixteen (32.65 per cent.); the occipital lobes in nine (18.36 per cent.), and the cerebellum in six (12.24 per cent.). The contrecoup bruises were mostly of the undersurfaces of the frontal and temporal lobes, usually with many contusions of the type included in Class 4 (Figs. 31 and 32).

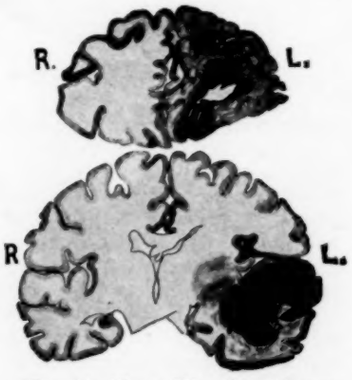

Fig. 12 (Case 24).—Coronal sections (anterior surface) through the frontal and temporal lobes, showing the depth of the contrecoup bruising (Class 7).

SUBDURAL TRAUMATIC HEMORRHAGES

Subdural traumatic hemorrhages result most frequently from lacerated cerebral veins where the brain is bruised. Also of importance are the bleeding, torn, cortical vessels. Infrequent sources of subdural hemorrhage are torn dural venous sinuses and the larger cerebral arteries of the base of the brain. In order to obtain facts for a better understanding of the location and extent of subdural hemorrhages, as much of the blood as could readily be removed from the torn brain without further injury was weighed, its distribution measured and the injury described, all with some accuracy.

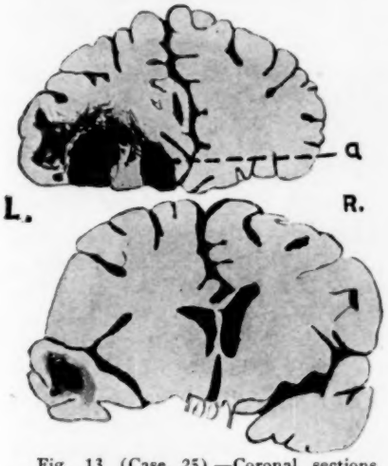

Fig. 13 (Case 25).—Coronal sections (posterior surface) through the frontal and temporal lobes, showing contrecoup bruises of the left frontal lobe (Class 1), and intracerebral bleeding back into the left temporal lobe.

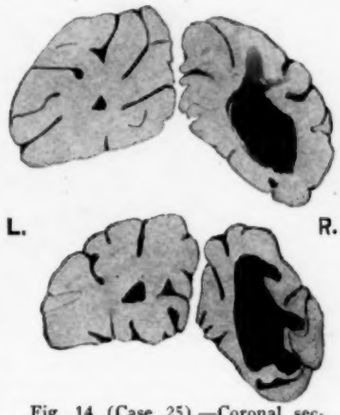

Fig. 14 (Case 25).—Coronal sections (posterior surface) through the occipital lobes. The bruise of the outside could not be seen from the undersurface with the cerebellum attached (Class 1), and both intracerebral bleeding beyond the margins of the bruise and rupture into a ventricle.

Subdural Hemorrhages with Fractures of the Posterior Fossae.—Examinations were made in 136 of the 178 fractures of this group. In 115 of the 136 there was subdural hemorrhage, 104 contrecoup and eleven direct. In seventy-one of the 115 the blood weighed between 20 and 210 gm., but the most frequent weight of these large clots was about 40 gm. In the remaining forty-four there were usually only a few grams (from 1 to 10 gm.), and in a few from 10 to 20 gm. Of the large subdural hemorrhages, fifty-four were local, that is, confined to the front third or front half of the cranial cavity, seventeen were more widely spread over one side of the cerebrum.

Of these large hemorrhages, sixty-six were located altogether on one side. Two of the large subdural hemorrhages were contributed to by tears of large cerebral veins without severe injury to the brain.

Subdural Hemorrhages with Fractures of the Middle Fossae.—Examinations were made in 134 of the 166 fractures of this group. In ninety-eight there was subdural hemorrhage. Of these, in fifty-one the blood weighed between 20 and 310 gm., in the other forty-seven much less. In sixty-three the subdural hemorrhage was contrecoup, in thirty-five, direct. Of the large subdural hemorrhages, thirty-six of the fifty-one were contrecoup, and fifteen, direct. Also, thirty-one of the large subdural hemorrhages were local, and twenty widely spread. The small subdural hemorrhages were only a few millimeters thick and extended from 1 to 10 mm. beyond the margins of the bruise from which the bleeding occurred. With increasing size, the subdural hemorrhages spread mostly up over the parietal lobe, the front margin advancing less than the upper and back margins.

Subdural Hemorrhages with Fractures of the Frontal Fossae.—In twenty-one of the forty-eight accurately described cranial injuries in this group there was subdural hemorrhage, and of these twenty-one, thirteen were direct and eight contrecoup. There were only six large subdural hemorrhages, five direct and one contrecoup, the latter beneath the tentorium cerebelli.

Subdural Hemorrhages with Extensively Comminuted Fractures.—In forty-three of the fifty fractures in this group, accurate records of the subdural hemorrhage or its entire absence were made. There were subdural hemorrhages in thirty-six, twenty large and sixteen small. Eighteen large subdural hemorrhages were contrecoup, and only two direct. Twelve small hemorrhages were contrecoup and four direct. In several cases there were both direct and contrecoup subdural hemorrhages.

Subdural Hemorrhages with Fractures of the Vault.—There were subdural hemorrhages in thirty-eight of the forty accurately described brains; twenty-eight of these were large and ten small. All but three of the large subdural hemorrhages were contrecoup, and fourteen of the large hemorrhages were local.

TRAUMATIC EXTRADURAL HEMORRHAGES

Bleeding, which splits the dura away from the cranial bones as a result of fracture, may result from laceration of the trunk or branches of one of the middle meningeal arteries, the dural venous sinuses, the cerebral veins at the point of entrance into the superior longitudinal sinus, tears of the dura allowing free subdural blood to enter the extradural space, from the broken cranial bones, or from pericranial hemorrhages with comminuted depressed fractures.

Fig. 15 (Case 26).—Extensive, traumatic, comminuted fracture of the cranial bones, 55.9 cm. long. The cause of the fracture was undetermined. The scalp bruises were opposite the lambda. The patient was a white man, about 35 years of age.

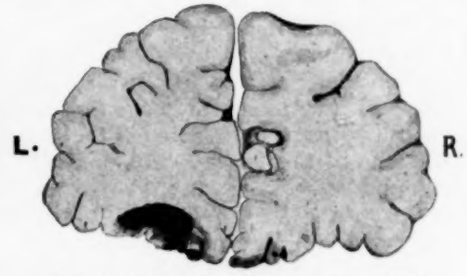

Fig. 16 (Case 26).—Coronal section (posterior surface) of the frontal lobes. Contrecoup bruises of Class 3 of the left frontal lobe and Class 4 of the right frontal lobe are shown here.

There were extradural hemorrhages in 199 (39.48 per cent.) of the 504 fractures in this series. Of these 199, 104 (52.26 per cent.) were large enough to produce appreciable compression of the brain (from 20 to 246 gm.) and ninety-five were small, usually only a

few grams. Of the large extradural hemorrhages, seventy-three (70.19 per cent.) were with fractures of the middle fossae; fifteen (14.42 per cent.) with fractures of the posterior fossae; ten (9.61 per cent.) with fractures of the vault; three (2.88 per cent.) each with fractures of the frontal fossae and fractures listed as extensively comminuted. About 50 per cent. of the small extradural hemorrhages resulted from bleeding of the broken bones, and 20 per cent. from torn dural sinuses. The remainder were probably due partially to bleeding from broken bones and from pericranial hemorrhage.

Fig. 17 (Case 27).—Healing, traumatic fracture of the skull of undetermined cause, in a negro, aged 40. This illustrates the course of many fractures of the posterior fossae.

Fig. 18 (Case 27).—Typical traumatic hemorrhage (*a*) in the pons (Class 5), and (*b*) traumatic hemorrhage of the intracerebral type (Class 6), usually in the cerebral ganglions.

Of the large extradural hemorrhages, forty-nine covered the temporal and parietal lobes on one side, thirty-four the temporal, parietal and occipital lobes on one side, fourteen one occipital lobe, six the frontal and parietal lobes on one side, and one the temporal and parietal lobes of both sides. Of these large hemorrhages, forty-nine were attributed to bleeding from the anterior branch of one of the middle meningeal arteries, forty-four from one of the posterior branches, three to laceration of the superior longitudinal sinus (the blood in two weighed between 25 and 30 gm., in the third about 60 gm. on each side, that on the left removed by the surgeon) and eight, in which there were fractures of the posterior fossae, from one of the transverse sinuses, the blood in none of the latter weighing more than 50 gm. Thirty-six of the large extradural hemorrhages were with fractures of the middle fossae passing through the anterior parts of the fossae in the squamous portions of the temporal bones, and thirty-seven with fractures that passed through the middle and posterior portions of the fossae. Comminution of the bones in the middle fossae occurred in less than half of the seventy-three large extradural hemorrhages; most of the fractures were of the linear type. Fifty-four of the large extradural hemorrhages were on the left side, forty-nine were on the right side, and one was on both sides.

The usual shape of the blood clot of the large compressing type is oval, the margins thinnest and the center thickest. The long dimension is obliquely directed up and back. The lower border is seldom lower than the middle temporal convolution, and the upper border is usually 1 or 2 cm. from the superior longitudinal sinus (only in six instances did the clot reach to the sinus). The thickest portion of the clot is usually at the middle of the outer surface of one of the parietal lobes so that the greatest compression of the brain is in a line drawn horizontally through the middle of the parietal eminences. The compression of the brain is saucer-shaped (Fig. 30). The blood clots early, so that with death one or one and one-half days after the injury the clot adheres to the dura, when the calvarium is removed, rather than to the bones. Later the clot becomes so adherent that it is necessary to use the sharp edge of a knife to detach it. The average dimensions of a clot weighing about 100 gm. (this is an average weight) are 10 by 8 cm. and from 3 to 3.5 cm. thick.

In nine of the large extradural hemorrhages caused by fractures of the middle fossae, there was no bruising of the brain grossly visible; in thirty-three there were only superficial bruises like those included in Class 3 of brain injuries; in twenty-five there was sufficient bruising to allow from 5 to 20 gm. of blood to enter the subdural space, and in six there were large subdural clots weighing from 40 to 120 gm. In none of the fifteen large extradural hemorrhages resulting from fractures of the posterior fossae was the brain without bruises, and in thirteen there were large bruises, contrecoup, and in the other two like those of Class 3. There were bruises of the brain in the remainder of the large extradural hemorrhages, frequently like those of Class 2. The proportion of contrecoup and direct bruises was approximately the same in fractures with large extradural hemorrhages as with the fractures without such hemorrhages.

There were decompression operations in twenty-three of the large extradural hemorrhages, in some with free blood still present at the time of the postmortem examination in and beneath the decompression defect, and weighing from 60 to 120 gm. There were several decompression operations not included in these twenty-three in which the conditions postmortem precluded conclusions as to whether a large extradural clot was present before the operation; and for these no mention of a large extradural hemorrhage was made in the description of the operation by the surgeon. Sixteen of the twenty-three operations were with fractures of the middle fossae, three with fractures of the

Fig. 19 (Case 28).—Extensive comminuted, traumatic fracture of the cranial bones, 138.9 cm. long, in a white man, aged 52, who, while in the hospital suffering from chronic alcoholism, jumped from a second story balcony to the main floor and struck the cement floor head first. There were superficial contrecoup contusions of the brain (Classes 3 and 4) and moderate leptomeningeal hemorrhage. Death occurred in five minutes.

posterior fossae, three with fractures of the vault, and one with an extensively comminuted fracture.[4]

TRAUMATIC LEPTOMENINGEAL HEMORRHAGE

Bleeding into the subarachnoid space or between the brain and pia (subpial) occurred in about 95 per cent. of all the fractures. Subarachnoid hemorrhage results most frequently from bleeding of bruises of the brain, but also from rupture of leptomeningeal vessels. Subpial hemorrhage results from tears of the pial arteries and cortical vessels. Subpial hemorrhage is seldom as extensive as subarachnoid hemorrhage, and is usually only enough to discolor the surface of the brain pink.

The extent and amount of subarachnoid hemorrhage is dependent on the size of the tear of the arachnoid membrane at the bruise (with large defects, bleeding occurs more readily into the subdural space[5] than with smaller defects in which the margins of the bruise extend beyond the edges of the arachnoid tear), the bruise of the brain and the laceration of leptomeningeal vessels. Therefore, the amount of subarachnoid hemorrhage is not always proportional to the extent of the bruising of the brain. It is always thickest about the margins of the bruises and gradually thins out centrifugally, sometimes covering an entire hemisphere. When extensive, from 1 to 3 mm. thick, the convolutions of the brain are hidden. When less extensive, the sulci stand out as a network because the blood tends to collect in them, and between them the convolutions form a pink meshwork. When slight, the convolutions are discolored pink ("traumatic lividity"). Although severe brain injuries and extensive leptomeningeal hemorrhage are frequently coincident, still there were a few extensively comminuted fractures associated with superficial bruises of the brain but with extensive leptomeningeal hemorrhage, and with some of these death occurred abruptly—from within a few minutes to several hours (Fig. 9).

The location of leptomeningeal hemorrhages corresponds in general to that of bruises in the various types of fractures.

Fig. 20 (Case 29).—Typical linear fracture of the midline of the posterior fossae, 21.2 cm. long. The patient, a white woman, aged 38, died about four days after falling down a flight of stairs.

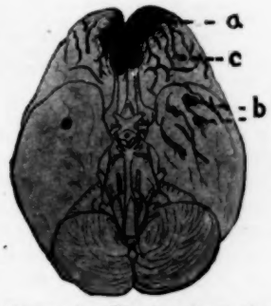

Fig. 21 (Case 29).—The location and extent of the contrecoup tears (Class 1) of the frontal lobes (*a*) with rupture of the lateral ventricles, contusions (Class 4) of the temporal lobes (*b*) and traumatic subpial hemorrhage (*c*). A thin layer of clotted blood in the subdural space covered the entire brain, and at each tear there were about 5 gm. Altogether the subdural clot weighed 23 gm.

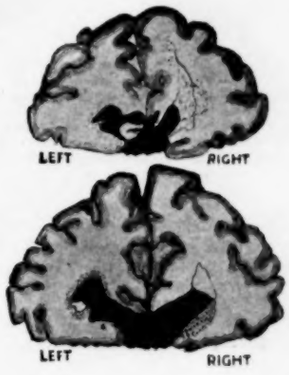

Fig. 22 (Case 29).—Coronal sections (posterior surface) through the frontal lobes, showing the depth of the tears and the petechial hemorrhages and edema of the surrounding brain tissue.

TRAUMATIC EDEMA OF THE BRAIN

The most frequent change in brains of patients dying from fracture of the skull was traumatic edema of the brain, and it was the only change sufficient to explain death in a few cases. As in other forms of edema of the brain, the convolutions are flattened, the cerebral veins relatively empty and flattened, the peripheral ends of the sulci closed up more or less tightly, the fluid in the leptomeninges greatly lessened; and when the edema is marked, the visceral layer of the arachnoid is almost dry when the dura is first removed, and by reflected light this surface of the arachnoid is finely granular because the little moisture present is heaped up by separating the two serous surfaces into almost microscopic droplets.

REPORT OF CASES

The failure on the part of police officers and physicians to recognize the presence of fractures of the cranial bones and severe brain injury, or to recognize these injuries only after several hours, requires some comment. Some of the cases reported concern the transfer of patients with fracture of the cranial bones from one hospital to another, in a few even after the nature of the injury was known.

CASE 1.—A man, aged 45, who had fallen on a sidewalk, was taken to a police station and remained there from 11 p. m. until 12:15 p. m. the next day, when he was taken to the Cook County Hospital, where cerebral hemorrhage, left sided hemiplegia and basal skull fracture were diagnosed. He lived forty-five hours in the hospital.

Postmortem examination revealed a fracture of the right side of the vault, 17 cm. long, below this an extradural clot weighing 118 gm., covering the right motor region, and superficial direct contusions of the right cerebral hemisphere. The only external sign of injury was a bruise of the scalp about the right ear.

CASE 2.—An adult negro, after a street fight, while intoxicated, fell to the sidewalk and was taken to a police station, where he remained about twelve hours, lying on a cement floor. The following morning he was taken home, and then worked for three days as a porter in a saloon. On the fourth day he became "dopy" and was taken to the Cook County Hospital, where cerebral hemorrhage and lacerated scalp were diagnosed. He lived eleven days in the hospital, and five days passed between the time of injury and the entrance to the hospital.

Postmortem examination disclosed a fracture of the left half of the posterior fossa, 8 cm. long, contrecoup contusions of the frontal and temporal lobes, that of the right frontal 5 cm. deep, a huge subdural blood clot weighing 120 gm. of the front half of the right subdural space (brown and clotted firmly), and a healing laceration of the scalp near the inion.

CASE 3.—A man, aged 37, walked into a police station at 9 p. m., supposedly drunk. The next morning at 10:30 a. m.

4. Although the period of time covered in the two articles is the same, a little discrepancy exists between the figures regarding extradural hemorrhages by us and the figures of Dr. Moody (THE JOURNAL, this issue, p. 511). This is due to the inclusion here of cases from the Hospital of the House of Correction.

5. Strictly speaking, the term "subdural space" is a misstatement because the inside of the dura is lined with the smooth, glistening parietal layer of the arachnoid, and for "subdural space," which is commonly used, there should be substituted "arachnoid space."

he was taken to the Cook County Hospital, where he lived two and one-half days, cerebral hemorrhage and lobar pneumonia being diagnosed.

At the postmortem examination a fracture of the right half of the posterior fossa, 32.8 cm. long, extensive destruction of the tip of the right frontal lobe, 3 cm. deep, and a thin clot of blood in the subdural space covering the whole right hemisphere, but chiefly in front, were found. There was no sign of external injury of the scalp.

CASE 4.—A man, aged 50, fell down a flight of stairs about 1 a. m. and arrived at one police station at 2 a. m. the same day, where he remained for twenty minutes and was then taken to another police station for medical care, remaining there until 8:40 a. m. the same morning, when he was taken to the Hospital of the House of Correction. Skull fracture was diagnosed and two decompression operations performed, one of each parietal region. He lived for three and one-half days in the hospital.

Fig. 23 (Case 30).—Traumatic, slightly depressed fracture of the skull, 19.5 cm. long. On the right side in the parieto-occipital region there was an extradural clot, 9 by 7 by 1 cm. in its largest dimensions, and weighing 40 gm. The patient, a white boy, aged 14 years, was struck by an automobile seven and one-half days before death.

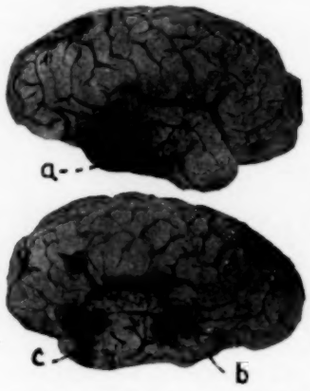

Fig. 24 (Case 30).—A direct bruise at *a* (Class 2) under the depressed fracture, a contrecoup bruise at *b* (Class 3), and superficial contusions at *c* (Class 4). About the bruises there was leptomeningeal hemorrhage. There were several grams of blood subdural about the tear of the right temporal lobe, but none on the left side.

Postmortem examination revealed a linear fracture of the left posterior fossa, 9 cm. long, contrecoup bruises of the frontal and temporal lobes, that of the right frontal lobe being deepest, reaching to the lateral ventricle, a thin subdural clot covering the front half of the right cerebral hemisphere, and an extradural clot weighing 40 gm. in the operation defect of the left parietal region.

CASE 5.—A man, aged 22, after an unknown injury, and supposedly suffering from alcoholism, was taken to a hospital where he remained one day before skull fracture was suspected, after which he was taken to the Hospital of the House of Correction, where he lived two days. Skull fracture was diagnosed and a decompression operation of the left parietal region was performed.

Postmortem examination revealed a fracture of the left posterior fossa, 34.8 cm. long, contrecoup bruises of the right frontal and temporal lobes, and a direct bruise of the left half of the cerebellum, a large subdural clot on the right side in the front half, an extradural clot filling the decompression bone defect and a bruise of the scalp behind.

CASE 6.—A man, aged 35, arrested and taken to a police station, remained twelve hours, suffering from alcoholism and epileptic fits, according to the police officers. He was taken to the Hospital of the House of Correction, where he lived fifteen hours. Skull fracture was diagnosed.

Postmortem examination revealed an extensively comminuted fracture of the back and base of the skull, with diastasis of both lambdoid sutures, altogether 60 cm. long; also there were deep contrecoup bruises of the frontal poles, subdural clots covering both frontal poles, 30 gm. of blood in the decompression defect of the left parietal region, and bruises of the scalp behind.

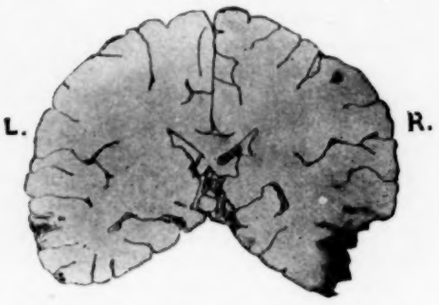

Fig. 25 (Case 30).—Coronal section (posterior surface) through the temporal lobes, showing the depth of the direct and contrecoup bruises.

CASE 7.—A man, aged 40, was arrested and taken to a police station on account of alcoholism; after remaining there twelve hours he was taken to the Hospital of the House of Correction, where he lived twenty-eight hours, and where a decompression operation of the left parietal region was performed.

Postmortem examination revealed a fracture of the right parietal bone, slightly comminuted and 17 cm. long, a large contrecoup bruise of the right frontal lobe, blood subdural in front on the right side weighing 110 gm., and bruises of the scalp over the fracture.

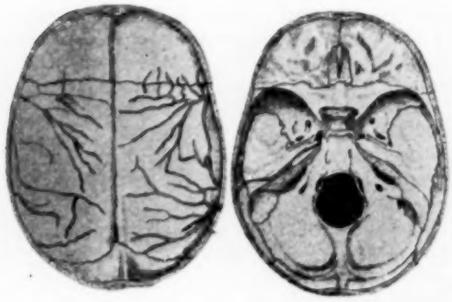

Fig. 26 (Case 31).—Linear fracture of the left middle fossa 9 cm. long. Three days and six hours before death this man, aged 42, fell while in a "fit," and struck his head on a cement sidewalk.

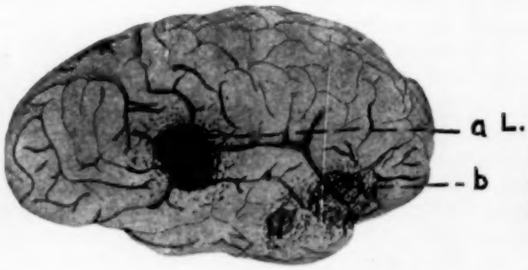

Fig. 27 (Case 31).—A contrecoup bruise at *a* (Class 3) and superficial contusions at *b* (Class 4), with subpial hemorrhage. There were 90 gm. of clotted blood in the subdural space on the right side covering the back half of the hemisphere. There was no bruising of the left cerebral hemisphere.

Fig. 28 (Case 31).—Coronal section (posterior surface) through the deepest part of the contrecoup bruise. The symmetry of the brain is due to compression by the subdural clot on the right side.

In these cases there was failure to detect the presence of a skull fracture, or the fracture was discovered only after hours or days had elapsed:[6]

CASE 8.—A man, aged 28, was knocked to the ground by a falling sack of malt weighing 200 pounds. He was taken home, where he remained three days. Several physicians

6. Such unfortunate occurrences as these are less likely to be repeated, since they led to the institution of observation rooms at the Cook County Hospital, adjacent to the admittance department, where patients are kept over night or until the presence or nature of injuries is definitely ascertained.

examined him but none of them suspected the presence of a fracture of the skull, and one sent him to the hospital for the insane, where he lived seven hours and fifty minutes. No diagnosis was made in the hospital.

Postmortem examination revealed a linear fracture of the right posterior fossa, 8 cm. long, contrecoup bruises of the right frontal and temporal lobes and of the left occipital lobe, 40 gm. of blood on the right side behind (extradural) and a bruise of the scalp at the inion.

CASE 9.—A man, aged 42, while intoxicated, was tripped by a boy, October 9, and taken to the Cook County Hospital, where acute alcoholism and alcoholic dementia were diagnosed, and where he remained until October 22, when he was sent to Oak Forest (an infirmary). October 24, he was readmitted to the Cook County Hospital and lived for two days. Skull fracture was diagnosed on the second entrance.

Fig. 29 (Case 32).—Traumatic, comminuted and depressed fracture of the vault and base of the skull with independent fractures of the frontal fossae; also a decompression defect in which five loose pieces of bone were found by the surgeon. The superior longitudinal sinus was ruptured, and extradural bleeding resulted on both sides; that of the left was removed at the operation, and 60 gm. were found on the right side at the postmortem examination. The patient, a white man, aged 25, lived eleven hours and thirty minutes after being hit on the left side of the vault by a heavy iron bar during a fight.

Fig. 30 (Case 32).—Coronal section (posterior surface) through the brain 1 cm. posterior to the optic chiasm showing a tear (Class 2) at *a*, intracerebral bleeding from a bruise anterior to *b*, and the saucer-shape compression of the right cerebral hemisphere by the extradural clot weighing 60 gm. Traumatic hemorrhage of Class 7 at *c*.

Postmortem examination revealed a comminuted fracture of the right posterior fossa through the right petrous bone, in addition to contrecoup bruises of both temporal lobes, that of the left, 9 by 3 cm., and reaching to the lateral ventricle, into which bleeding had occurred; also there was an extradural clot covering the right parietal lobe weighing 28 gm. There was no external sign of scalp injury. The extradural clots were brown and firmly clotted, the subdural mostly on the left side and weighing only a few grams.

CASE 10.—A man, aged 35, was struck by another man in a fight. It is not known whether the blow was struck with a fist or a weapon. He was examined by a physician immediately, who found "nothing wrong except complaint of headache." Suddenly, after two or three hours, he had a "fit" and was taken to the Hospital of the House of Correction, where he lived two days.

Postmortem examination revealed a depressed, comminuted fracture of the right temporal bone, 120 gm. of blood extradural on the right side in the parietotemporal region, and a superficial bruise of the outside of the right parietal lobe. There were no external injuries, only a swelling in the right temple.

CASE 11.—A boy, aged 8 years, run over by an automobile, November 9, was treated at home until November 28, when he was taken to a private hospital and epidemic meningitis diagnosed. The same day he was removed to the Cook County Hospital by request of the health department, where he lived two days, and epidemic meningitis was again diagnosed. No one suspected skull fracture.

Postmortem examination revealed a small fracture of the ethmoid plate, superficial contusions (mostly subpial hemorrhage) of the frontal poles and left occipital lobe, and meningitis of the base of the brain (pneumococcus). Above the left eyebrow there was a scar.

CASE 12.—A man, aged 37, was in a fight, December 26, and fell to the sidewalk. He was taken to a private hospital, where he remained four days and where laceration of the scalp was diagnosed. The physicians thought there was no skull fracture. He was discharged and went home, but, December 31, he suddenly became very sick and was taken to the Cook County Hospital, where he lived eighteen hours and where skull fracture was diagnosed.

Postmortem examination revealed a fracture of the midline of the posterior fossae, and through the right petrous bone; in addition there were also superficial contusions of the tips of the frontal lobes, meningitis of the base, and a healing laceration of the scalp at the inion.

CASE 13.—A man, aged 71, walked into a private hospital at 5:15 p. m. with lacerations of the back of the head, which were dressed there and which he did not know how he received. He walked out of the hospital. Two days later he was arrested and taken to the Hospital of the House of Correction, where he lived four days. Here he was irrational and unable to talk; alcoholism and delirium tremens were diagnosed.

Postmortem examination revealed a fracture of the left middle fossa, linear and 10 cm. long; also direct bruises of the left temporal and parietal lobes covered by adherent, brown subdural clots, weighing about 5 gm.

CASE 14.—A man, aged 48, fell from a moving wagon, January 20, and was taken home. On the 24th he went to a physician's office, and the physician thought he was suffering from alcoholism. He remained at home for three or four days more, wildly delirious and all this time in bed. He was then taken to the Hospital of the House of Correction, where acute alcoholism was diagnosed and where he lived two days.

Postmortem examination revealed a fracture of the midline of the posterior fossae, 39.2 cm. long, deep contrecoup bruises of the frontal and temporal lobes, large subdural clots about the bruises, an extradural clot in the left occipital region, and hemorrhages in the pons. There was extensive hemorrhage into the deep tissues of the scalp behind.

CASE 15.—A man, aged 45, was found on a sidewalk by the police at 1 a. m., was taken to the police station, where an ambulance surgeon diagnosed alcoholism, and where he remained until 2:40 p. m. the same day, when he was taken to the Hospital of the House of Correction. Here skull fracture was diagnosed, and he lived only thirty-five minutes.

Fig. 31 (Case 33).—Traumatic, extensively comminuted and diastatic fracture of the skull, 123 cm. long, with an independent fracture of the roof of the right orbit. The greatest scalp injury was over the back half of the right parietal bone. This man, aged 35, fell from a ladder head first, about two hours before death.

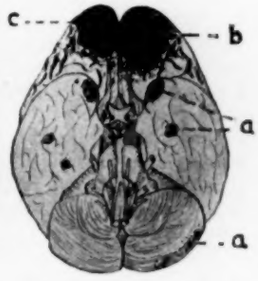

Fig. 32 (Case 33).—Multiple superficial, contrecoup contusions (Class 4) at *a*, a contrecoup tear of the undersurface of the left frontal lobe at *b* (Class 1), and a contrecoup bruise of the right frontal lobe (Class 2) at *c*. There were 190 gm. of blood in the left subdural space covering the entire left cerebral hemisphere, and only a few grams on the right side at *c*.

Postmortem examination revealed a fracture of the right middle fossa 18.5 cm. long, 200 gm. of blood extradural in the right temporoparietal region, superficial bruises of the outside of the right temporal lobe, and a thin clot of blood covering the right temporal lobe. There was no external sign of injury.

CASE 16.—A man, aged 49, found on the street by the police at 1 a. m., was taken to the police station, where he remained four hours, and then to a private hospital, where a physician diagnosed skull fracture and alcoholism. He was then transferred to the Hospital of the House of Correction at 6 a. m., and died the same day at 7:40 a. m. Skull fracture was diagnosed in the latter hospital.

Postmortem examination revealed a fracture of the right posterior fossa and traumatic diastasis of the right lambdoid suture, altogether 24 cm. long, in addition to contrecoup bruises of both frontal and the left temporal lobes, all superficial except the latter, which reached to the lateral ventricle; there was blood in all of the ventricles of the brain. There was only a little subdural hemorrhage about the bruises. The scalp was lacerated at the inion.

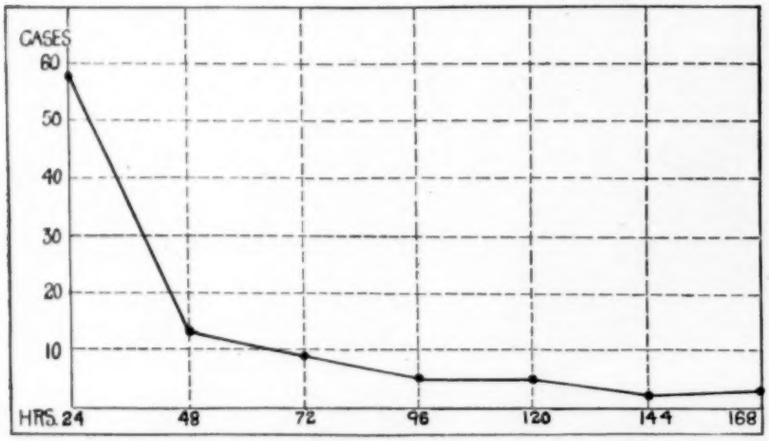

Fig. 33.—Time of death of ninety-five of the 104 patients dying with large extradural hemorrhages. Of the nine not shown in this graph, five were found dead and four died between the eighth and the twenty-second day after entrance to hospital. (Other details connected with some of these extradural hemorrhages, diagnosis, operations, etc., are given in the article by Dr. Moody.)

CASE 17.—A man, aged 44, was arrested at 2 a. m. and taken to a police cell, where he remained until 11 a. m. the next day, the ambulance physician having diagnosed incipient delirium tremens. He became violent and was taken to the Hospital of the House of Correction, where he lived eighteen hours, and where delirium tremens was again diagnosed.

Postmortem examination revealed a linear fracture of the left lambdoid suture, right parietal bone and right middle fossa; there were also a contrecoup laceration of the left frontal lobe 4.5 cm. deep, a large subdural clot covering the top and side of the left frontal lobe, a small extradural clot in the right middle fossa, and hemorrhage into the right eyelid. There was no other sign of injury of the scalp, but in the deep scalp tissues of the right parietal region there was hemorrhage.

CASE 18.—A man, aged 24, to escape the police, jumped off a train into the Drainage Canal. At the Hospital of the House of Correction, where he stayed one week, no diagnosis was made. At home he complained of headache, and after ten days was removed to Cook County Hospital, where purulent meningitis was diagnosed, and where he lived one day. Postmortem examination revealed a fracture of the ethmoid plate and sella turcica, superficial contusions of both frontal lobes, and meningitis of the base.

CASE 19.—A man, aged 53, was found intoxicated by the police, 8:15 p. m., June 6; the police took him to a police station, where he fell on the floor; the wounds sustained were dressed at a private hospital, and he was again taken to the police station, where he remained until 11:30 p. m., June 7. He was then removed to the Hospital of the House of Correction, where he died, June 10, at 12 m. Basal skull fracture was diagnosed.

Postmortem examination revealed a fracture of the midline of the vault and posterior fossae, 50 cm. long; also there were extensive contusions of the undersurfaces of the frontal and temporal lobes of both sides, 16 gm. of blood subdural at the bruises, 30 gm. extradural along the superior longitudinal sinus, and meningitis of the left temporal lobe.

CASE 20.—A man, aged 70, was arrested for acute alcoholism and kept in a police station for ten hours; then he was removed to the Hospital of the House of Correction, where he remained two days; lobar pneumonia and delirium tremens were diagnosed.

Postmortem examination revealed a fracture of the right middle fossa, 17.5 cm. long, a large laceration of the right parietal and temporal lobes reaching to the lateral ventricle, 75 gm. of blood outside the dura and covering the right parietal region, and extensive hemorrhage into the right side of the scalp behind.

Other cases, such as these, concern cranial fracture recognized by physicians, and the patients transferred from one hospital to another:

CASE 21.—A man, aged 62, was run over by an automobile about one hour before entrance to a hospital, where he was given first aid; he was then taken to another hospital, where a decompression operation was performed above the right ear; here he remained for three or four days, and was then taken to the Cook County Hospital, where he lived three and one-half days and where old skull fracture, infected decompression wound and fractured ribs were diagnosed.

Postmortem examination revealed a fracture through the right petrous bone, 18 cm. long, superficial contrecoup bruises of the frontal and temporal lobes, fibrinopurulent meningitis of the top of the brain, and purulent ependymitis.

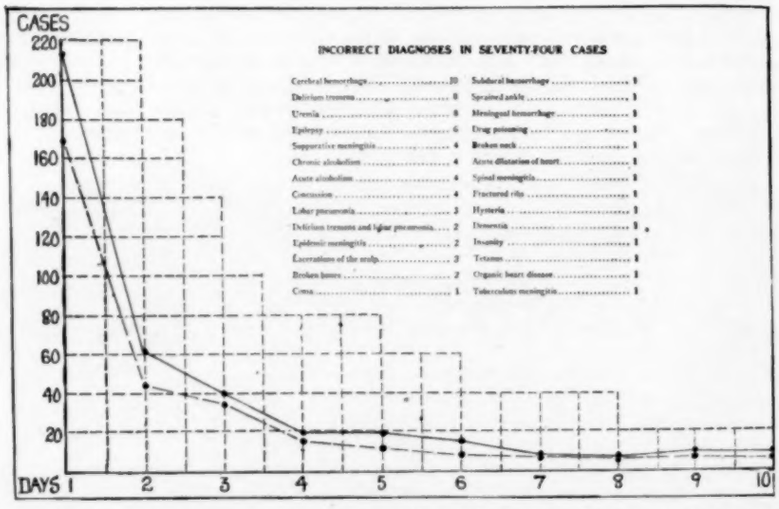

Fig. 34.—Time in twenty-four hour periods of death from fracture of the cranial bones and brain injuries of 403 of the 504 patients (upper line), and number of correct diagnoses during the same periods (lower line). The 101 remaining are not included because the time for eighteen of them was from eleven to twenty-two days, inclusive; twenty-seven had to do with persons found dead; for thirty-eight the records were incomplete; and eighteen concerned healed fractures. Any consideration of diagnosis must take into account the time under observation. Therefore, such charts as were used by Bissell and LeCount (A Consideration of the Relative Frequency of the Various Forms of Coma, THE JOURNAL, March 27, 1915, p. 1041; Feb. 17, 1917, p. 500) are continued here.

CASE 22.—A man, aged 37, was struck by a street car at midnight, December 18, and taken to a private hospital, where skull fracture was diagnosed, and where he remained for five days. Because of inability to assure payment for hospital service, the patient was transferred to the Cook

County Hospital, where he lived until December 29, altogether eleven days.

Postmortem examination revealed a linear fracture of the midline of the base and left petrous bone, 38.5 cm. long; there were also lacerations of both frontal lobes, contusions of the temporal lobes and a direct bruise of the undersurface of the cerebellum, a few small subdural clots at the lacerations, and fibrinopurulent meningitis of the cerebellum.

TRAUMATIC FRACTURE OF THE CRANIAL BONES

CLINICAL CONSIDERATIONS, WITH ESPECIAL REFERENCE TO EXTRADURAL HEMORRHAGE *

W. B. MOODY, M.D.

CHICAGO

Between August, 1911, and June, 1918, 908 patients entered the Cook County Hospital for "skull fracture." This diagnosis was made certain for 547 of these either by operation or by postmortem examination. Fracture of the cranial bones was diagnosed by means of the roentgen ray for 105 others. The remainder (256) include patients whose illness and injuries were recovered from, and the conclusion that they also suffered from traumatic fracture of the cranial or other skull bones was not as adequately confirmed; for some small part of these, especially those in the hospital only a few hours, the diagnosis may

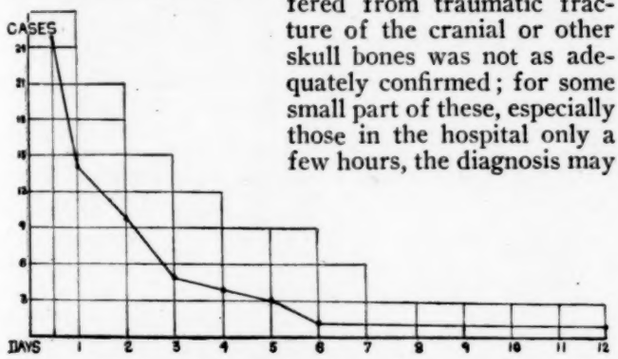

Chart 1.—Number of days under observation of sixty-three patients with extradural hemorrhage found at postmortem examination but not recognized clinically.

have been wrong. Postmortem examination was made in all deaths but sixty-two; in forty-one of these no fracture of the skull was actually demonstrated.

These considerations, as well as others shown in the accompanying table, are simply prefatory, since it is proposed to discuss here the extradural traumatic middle meningeal hemorrhages. Of the total 908 thought to be skull fractures (547 demonstrated as such), there were 100 with extradural hemorrhages of such size that compression of the brain by the blood was the chief cause of death. This condition was established for all the 100 patients either by operations, by postmortem examinations, or by both.

Diagnosis of traumatic extradural middle meningeal hemorrhage, found postmortem, was not made clinically in sixty-three instances. The time under observation of these sixty-three patients, whose compression of the brain was not recognized, is shown in Chart 1. It will be noted that twenty-four were in the hospital two days or more, the longest period for any single patient being twelve days.

Among other details regarding these extradural hemorrhages, shown in the table, is that all of the thirty-seven patients in whom the condition was recognized had a decompression operation. Of this number, twenty-six died, twenty-one being operated on within twelve hours after entrance to the hospital (Chart 2). The longest period any one patient was under observation before operation was seven days. Following operation, eighteen died within twenty-four hours, three inside of the next two days and one patient on the twenty-second day (lobar pneumonia).

As stated, sixty-three of the extradural hemorrhages were not recognized clinically. The maximum weight of the extradural blood found postmortem was 246 gm., the minimum, 40 gm., with an average of 110.5 gm. for the sixty-three. In the clinical records for all but two there were symptoms generally regarded as useful in the recognition of compression of the brain; nine patients had hemiplegia, nine rigidity of the muscles on one side, and nine had convulsions; in twenty-three there was a positive Babinski reflex, and in some of the sixty-three the symptoms were combined in various ways.

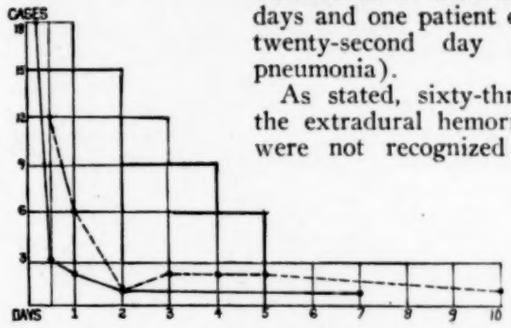

Chart 2.—Time under observation before operation (solid line), and time between operation and death (broken line), of twenty-six patients with extradural hemorrhages, diagnosed and operated on, one patient dying on the twenty-second day with lobar pneumonia is not represented.

In general, the pulse at the time of entrance and for a short time afterward was full and strong, from 65 to 90, the temperature from 97 to 99 F. The most conspicuous features of pulse and temperature records, however, are that in the eleven recovering with decompression operation, the pulse and temperature were both lower than in other patients, and this pertains equally to conditions before and after operation.

FINDINGS IN FIVE HUNDRED AND FORTY-SEVEN CASES OF SKULL FRACTURE *

	Fracture Demonstrated	Fracture Not Demonstrated	Extradural Hemorrhage
Died (male)	407	34	77
Died (female)	37	7	12
Recovered (male)	94	285	10
Recovered (female)	9	35	1
Necropsies	423	...	85
Operated on and died	82	...	26
Operated on and recovered	55	...	11
Entered conscious	108	164	13
Entered unconscious	436	194	87
Convulsions	66	19	14
No clinical evidence of injury	80	55	17
Positive Babinski reflex	156	64	33
Patellar reflex absent	119	42	26
Patellar reflex exaggerated	103	59	26
Hemiplegia	49	7	21
Spasticity	31	7	15
Facial paralysis	36	19	8
Ptosis of eyelids	12	3	2
Clear cerebrospinal fluid (taken before death)	25	20	7
Meningitis	39	2	0
Bleeding from nose	163	107	24
Bleeding from mouth	59	43	6
Bleeding from ears	132	118	23
Eye reflexes normal	156	203	29

* In sixty-two deaths, no postmortem examination was made. In twenty-one of these, fracture had been previously demonstrated. Roentgenologic diagnosis of skull fracture was made in 133 instances, 105 not being subsequently confirmed (by operation or portmortem examination). There was no roentgenographic evidence of fracture of the skull in ninety-six instances. Seventeen of these were found at necropsy to be fracture.

* From the Cook County Hospital.

In twenty-seven of the clinical records blood pressure is recorded, without, however, anything of importance to comment on here because the observations were not repeatedly made for any single patient.

The other important features of these head injuries with one exception are indicated in the table. This exception concerns the records of blood examinations, and of all these 107 were found in the entire number (908). That there was an average leukocytosis of 15,300 apparently makes this condition of importance in the recognition of skull fracture. The number is so large that it is difficult to be accounted for by bronchopneumonia, and still less readily by meningitis; moreover, many of these blood examinations were made shortly after entrance.

POSTDIPHTHERITIC PARALYSIS

WITH REPORT OF TWO CASES *

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The most common form of polyneuritis encountered in children is diphtheritic paralysis. Not many of these patients, however, come under the observation of the orthopedic surgeon, because either the children recover without any treatment, or they are brought to him too late, just as the case used to be with patients with anterior poliomyelitis who were brought to him only after the deformities were marked. Thus, we do not have the frequent chance to see the proper benefit of early orthopedic treatment in diphtheritic paralysis. I am anxious to emphasize particularly the value of orthopedic treatment in relieving the distressing respiratory symptoms.

Diphtheritic paralysis occurs usually in the second or third week after the illness. The frequency of its occurrence after the injection of antitoxin is hard to state, while without antitoxin it occurs in about 5 to 15 per cent. of the cases.

A distinction may be made between a localized and a generalized paralysis. In localized paralysis the soft palate is usually involved. The palate alone may be involved or the muscles of the pharynx and larynx may also be paralyzed as well as the ocular muscles. Paralysis of the muscles of accommodation is present, but reaction to light remains. Paralysis of the pharyngeal muscles causes trouble in swallowing. There may be regurgitation of fluids through the nose caused sometimes by difficulty in swallowing and again by the entrance of food into the larynx, owing to anesthesia of the epiglottis and paralysis of the muscles of deglutition. The paralysis may involve the recurrent laryngeal muscles, causing hoarseness and aphonia.

In the generalized form, the extremities are next affected. In severe cases there may also be involvement of the muscles of the trunk and neck, and sometimes of the diaphragm. This distinguishes diphtheritic paralysis from other forms of multiple neuritis.

In cases in which the extremities are involved, there is at first weakness, followed by paresthesia and then pain. Then follow disturbances of movement, of sensation and of coordination. Walking is exceedingly difficult or impossible. Westphal's sign is always present, and Romberg's symptom frequently may be noted. There are disorders of function of the bladder and the rectum. Paralysis of the cervical muscles may be so complete that the head cannot be held upright.

Respiratory paralysis may be due to involvement of the phrenic or the intercostal nerves. It is shown by occasional attacks of dyspnea and coughing. As the diaphragm is usually affected, the breathing is entirely thoracic. The respiratory movements are rapid, but irregular, shallow and ineffectual. There is cyanosis. The anxiety, distress and apprehension of the patient are sometimes terrible. There is constant dread of impending suffocation.

PROGNOSIS

Duration of the affection depends on its severity and extent. A patient may recover from a slight localized paralysis in a few weeks. The severer form lasts for many months, even for a whole year. Recovery is, as a rule, to be expected, though often it is much delayed and frequently leaves deformities. The deglutition paralysis is quite serious. Respiratory paralysis, myocarditis and nephritis are annoying complications.

Fig. 1 (Case 2).—Position of collar. This photograph was taken after recovery.

TREATMENT

Strengthening the diet is an important factor in the treatment of this condition; hence the patient should be fed by a stomach tube if he is not able to eat. The injection of serum is of doubtful benefit. Absolute rest in bed is important, and early contractures should be prevented. Massage and exercise are urgently recommended.

REPORT OF CASES AND COMMENT

CASE 1.—*History.*—O. R., boy, aged 3 years, referred to me by Dr. Luttinger, Jan. 27, 1919, had had diphtheria four weeks before. No antitoxin had been administered, and paralysis of all four limbs developed two weeks after the attack.

Examination.—There was paralysis of all four limbs and of the neck. The patient appeared apathetic. There was a marked drooping of the head forward; the eyelids dropped; speech was distinctly nasal, and could not be understood at all. Respiration was thoracic, rapid, irregular and shallow. The patient could not sit up. There was marked interference with deglutition.

Treatment and Results.—After noting the interference with the pharyngeal muscles and fearing the stretching of the paralyzed neck muscles, I decided to apply something to prevent the stretching (devised on the same principle as apparatus used in anterior poliomyelitis or other forms of paralyzed muscles), and perhaps also to facilitate the respiratory difficulties. Remembering the principle of the Thomas

* Read before the Orthopedic Section of the Academy of Medicine, Oct. 17, 1919.

collar used to support the neck in cervical Pott's disease, I made a collar from thick felt, 1½ inches in thickness and rather solid, and applied it in the vertical position. The width of the collar corresponded to the distance between the chin and the sternum when the head was slightly hyperextended (Fig. 1). This piece of felt was enveloped in softer felt, one-eighth or one-sixteenth inch in thickness. The collar was put on, encircling the neck, and the ends were sewed together. To my great surprise the child began to breathe better immediately. I then strapped the feet to prevent drop foot, and ordered the patient to bed, leaving the general treatment to the family physician, Dr. Luttinger. He took a culture from the child's nose and found diphtheria bacilli still present. He administered immediately 20,000 units of antitoxin. In a week a spinal brace was applied, the collar was left on, and massage was ordered. Later on, exercises were added. The exercises were, of course, the ones used in anterior poliomyelitis. In one and one-half months the child made a perfect recovery.

Though diphtheritic paralysis is curable, considering the severity of the symptoms, I believe that the orthopedic treatments, especially the application of the collar, hastened the recovery. I do not believe that the antitoxin was responsible for the recovery, as most pediatricians admit the uselessness of antitoxin in such a late stage. I was, however, skeptical about the orthopedic treatments till I had a chance to treat the second patient, who presented very interesting features:

Fig. 2 (Case 1).—Complete recovery. Note perfect symmetry of the face. Child is holding the brace which he was wearing before.

CASE 2.—*History.*—S. W., boy, aged 7, admitted to the medical service of Dr. T. F. Reilly, Fordham Hospital, April 25, 1919, had had diphtheria two months previous to admission. He had received 5,000 units of antitoxin on the second day after the attack. Six weeks later paralysis of both upper and lower extremities developed. The child could not speak or swallow, and had to be fed by a stomach tube for ten days.

Examination.—When I was called to see the patient, April 29, there were paresis of both upper extremities and almost complete paralysis of both lower extremities with a tendency to drop foot. Breathing was thoracic, superficial and shallow. The face was dull and apathetic. The head drooped forward and the child could not hold it in an upright position. The eyelids dropped. The patient could not speak. He was still being fed by the stomach tube. If liquids were taken, regurgitation through the nose occurred.

Treatment and Results.—Remembering the benefit derived from the felt collar in the first case, I applied a similar one to the second child. Plaster casts were applied to the feet at the same time. The child began to improve immediately. The sudden improvement brought great joy to the kind nurses of the children's ward, who had shown a devoted interest in the case. Within a few days the child took food himself and showed marked improvement in his speech. May 8, massage and exercises were ordered; May 15, the child was able to take a few steps when he was supported. The casts were removed, May 31. The child continued to improve and, June 30, he was discharged, entirely cured, without any deformity whatever.

It was a source of joy to note the interest of the nurses of the children's ward, who spared no pains to carry out all orders. The last examination, Aug. 26, 1919, disclosed no paralysis or weakness of any muscle.

This case emphasizes a few points that are in contrast to those noted in the first case. Antitoxin was given on the second day, and still paralysis developed. The improvement after the application of the collar was remarkable: before its application the patient was getting worse all the time.

The child was cured without a second dose of antitoxin, which means that the improvements in the first case were also due entirely to the orthopedic treatments.

Though children with diphtheritic paralysis do recover, still the very rapid recovery noted in these two cases is undoubtedly due to the orthopedic methods employed.

The benefit of the collar can possibly be explained on the theory that mechanically it relieves the pressure on the trachea and esophagus induced by the pressure of the head. I am not, however, prepared to say whether that is really the reason.

529 Courtlandt Avenue.

Effect of Alcohol.—The latest number of the special report series issued by the national health insurance medical research committee embodies the results of an investigation made on the effects of alcohol on manual work and the coordination of fine muscular movements. The pieces of test work to be done consisted in typing a memorized passage and correlating the number of errors, with the speed attained, in reproducing a given set of figures many times with a standard pattern adding machine and in pricking with an awl vertical rows of dots on a target suspended vertically at arm's length. The subjects included eight men and five women, and duplicate sets of experiments were conducted before and after the taking of moderate quantities of alcohol in the form of wine, etc., both while fasting and with food. The results of the experiments went to show that alcohol produced some effect in all of the individuals tested by the typing and adding machine methods. The degree of effect depended largely on whether the alcohol was taken on an empty stomach or with food, for on an average it was about twice as toxic under the former conditions as under the latter. In some subjects a moderate dose of alcoholic liquid, taken with food, produced no measurable reaction. Such a nonreactive dose amounted to one glass of port (= 18.5 c.c. alcohol) in a male subject, and to 4 ounces of port (= 22 c.c. alcohol) in a female subject. When the alcohol was taken with food, the effect was slightly longer in reaching its maximum. When alcohol (30 c.c.) was taken in 5 per cent. strength, the effect produced was about three fourths as great as when it was taken in 20 per cent. or 40 per cent. solution. A similar difference was observed when taking diluted brandy (10 per cent. alcohol) and "neat" brandy (37 per cent. alcohol).—*Medical Officer,* Nov. 15, 1919.

BLOOD PRESSURE IN OPERATIVE SURGERY *

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As a factor in the preliminary examination, for judging the condition of the patient during operation and in following up the postoperative recovery, the blood pressure examination is of great importance although as yet imperfectly appreciated.

Fig. 1.—Simple blood pressure apparatus for use in operative surgery: stethoscope bell strapped to the arm and attached to ear pieces by tubing; sphygmomanometer cuff wrapped snugly around the arm and secured with a safety pin; gage and bulb connected to the cuff by tubing.

PREOPERATIVE EXAMINATIONS

The physical examination, which should invariably be made before any patient undergoes a surgical operation, is incomplete without a study of the blood pressure. Some of the pathologic conditions which bear directly on the chance of recovery from the operation and the anesthetic are indicated by characteristic blood pressure readings. Nephritis is accompanied by a marked increase in the systolic and diastolic pressures. Tuberculosis is regularly accompanied by a low systolic pressure. Myocarditis is indicated by a low pulse pressure. Incompetence of the aortic valve is indicated by a high pulse pressure and a low diastolic pressure. In some cases of aortic disease and also of exophthalmic goiter, the fourth phase of the blood pressure wave extends to zero and the fifth phase is lacking. With the stethoscope applied at the elbow or at the popliteal space, the pulse sounds are heard without constricting the limb. In other cases showing the high pulse pressure of aortic incompetence or of exophthalmic goiter, the same condition is found while the patient is under ether anesthesia, but this passes away early in the recovery.

For determining the index of the patient's resistance, the rule given by Moots[1] is of great value. It may be thus stated:

> The pressure ratio, a fraction having the pulse pressure as numerator and the diastolic pressure as denominator, may be normal between 40 and 60 per cent. If the ratio is either high or low, there is reason to apprehend danger. If the ratio lies between 25 and 75 per cent., the case is probably operable; if outside these limits, it is probably inoperable.

In checking up the accuracy of this rule in a series of 1,000 cases, it was found that in the operable cases, 3.23 per cent. of the patients died and 96.77 per cent. recovered; in the inoperable cases, 23.07 per cent. of the patients died and 76.93 per cent. recovered.[2]

ROUTINE EXAMINATIONS DURING OPERATIONS

The importance of routine blood pressure tests in the course of surgical operations is not generally appreciated. Catastrophes occur daily which might have been foreseen and prevented by attention to this subject. The apparatus required is simple. The bulb or pump with release valve, for raising or lowering the pressure in the cuff, is joined to the gage by a short piece of tubing. By a T, inserted in this tubin connection is made with the usual cuff by a tube 3 feet in length. The gage is attached to the patient's pillow so as to be in the anesthetist's field of view. The cuff is wrapped smoothly about the arm and the outer folds secured by a safety pin. A flat stethoscope bell is connected to ear-pieces by a tube 3 feet long. The bell is provided with an elastic garter for keeping it in place at the bend of the elbow. This apparatus is put in place before the anesthesia is commenced. At five or ten minute intervals the anesthetist takes, by the auscultatory method, the systolic, diastolic and pulse pressures and records them on a chart on which are also entered the pulse and respiration rate, and other data of interest concerning the anesthesia or the operation. Changes in the blood pressure will result from excitement, from obstruction to respiration, from overdose of the anesthetic, from changes in the position of the patient, from unusual temperature in the operating room, and from hemorrhage or as the result of operative manipulation.

Hot and cold applications within the abdomen cause a marked fall in the systolic pressure, but the change

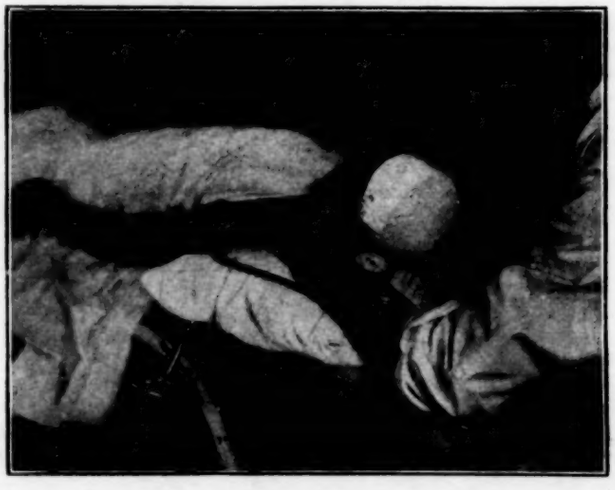

Fig. 2.—Blood pressure apparatus from anesthetist's point of view: gage attached to pillow in easy view, thus obviating danger of leaving pressure in the cuff between observations; during operations, the arm to which the apparatus is attached need not be exposed.

is usually transient. A drop in the temperature of the operating room is followed by a corresponding fall in the blood pressure, especially in the cases in which there is considerable visceral exposure. When the operating room temperature is raised the blood pressure slowly recovers. An operation performed in a room at a temperature of from 50 to 60 F. is certain to be accompanied by a considerable fall in the blood pres-

* Read before the Central New York Medical Association, Syracuse, N. Y., Oct. 30, 1919.

1. Moots, C. W.: Am. J. Obst. **74**: 996 (Dec.) 1916.

2. Miller, A. H.: Boston M. & S. J. **180**: 12 (Jan. 2) 1919.

sure, which will be especially marked if the incision is extensive and if there is a large exposure of viscera. The operating room temperature should be a matter of concern and should not be allowed to fall below 70 F. in the course of any major operation.

EFFECT OF POSTURE

To determine the effect of posture on the blood pressure during operations under anesthesia, a series of 1,000 cases has been tabulated with regard to posture and blood pressure. In this study, some confusion in the determination of standard pressures for comparison was inevitable. The standard pressures were taken in the dorsal position; some on the day before operation, some on the day of operation before the commencement of anesthesia, and some in the course of the anesthesia and the operation. The standard pressures taken on the day before operation are sometimes increased because of excitement. On the day of operation, the readings are frequently depressed as a result of the technic of preparation, including catharsis and deprivation of food and water, and following preliminary medication. The pressures taken in the course of operations may have been modified by the action of the anesthetic or by operative manipulations. The pressures for comparison in the dorsal position have been taken from ten to twenty minutes after the commencement of anesthesia. Pressures in other positions have been taken at

TABLE 1.—LACK OF REACTION TO EXPOSURE AND MANIPULATION OF INTESTINE FOR MORE THAN AN HOUR UNDER LIGHT ANESTHESIA IN EXPLORATORY LAPAROTOMY AND REDUCTION OF HERNIA THROUGH FORAMEN OF WINSLOW *

Time	Ether Dosage, Fluidounces	Pulse	Respiration	Blood Pressure: Systolic	Blood Pressure: Diastolic	Pulse Pressure	Remarks
Day before	..	120	24	120	85	35	
9:45	..	...	..	...	..	..	Ether anesthesia
	1						
9:50	..	132	28				
	2						
9:55	..	...	..	...	..	..	Operation begun in lithotomy position
	3						
10:05	4	120	36	125	95	30	
10:10	..	...	..	...	..	..	Abdominal operation in dorsal position
10:15	5	136	48				
	6						
10:25	..	124	36				
10:30	..	...	..	130	90	40	Exposure and manipulation of intestine
	7						
10:40	..	132	40				
10:45	..	...	..	130	90	40	
	8						
10:55	..	108	36				
11:00	..	...	..	130	90	40	
11:05	..	116	32	...	..	..	Appendectomy
11:10	9	...	..	135	95	40	
11:15	..	104	28				
11:20	¾	...	..	135	95	40	
11:25	..	...	..	...	..	..	Operation completed

* Pupil, contracted throughout; color, normal throughout. Recovery was uncomplicated.

a like period after the particular position has been assumed.

In the dorsal position, the systolic pressure varied less than 10 mm. in 55 per cent. of the cases, increased more than 10 mm. in 22.5 per cent., and diminished more than 10 mm. in 22.5 per cent.

In the lithotomy position, the systolic pressure varied less than 10 mm. in 64.5 per cent., increased in 24.4 per cent., and diminished in 11.1 per cent.

In the combined lithotomy and Trendelenburg position, the systolic pressure varied less than 10 mm. in 25 per cent., increased in 50 per cent., and diminished in 25 per cent.

In the reverse Trendelenburg position, the systolic pressure varied less than 10 mm. in 40 per cent., and diminished more than 10 mm. in 60 per cent. of the cases.

In the Trendelenburg position, the systolic pressure varied less than 10 mm. in 38.7 per cent., increased in

TABLE 2.—RESULT OF TRANSFUSION, EXPLORATORY LAPAROTOMY AND GASTRO-ENTEROSTOMY FOR PYLORIC ULCER WITH EXTENSIVE HEMORRHAGE *

Time	Gas - Oxygen, Liters per Min.	Pulse	Respiration	Blood Pressure: Systolic	Blood Pressure: Diastolic	Pulse Pressure	Remarks
Day before	..	122	..	60	30	30	9 p.m.
9:15	..	...	..	70	40	30	
9:45	..	...	..	...	..	..	Transfusion of 750 c.c. of blood from sister; procain anesthesia
10:00	..	...	..	110	60	50	
10:10	..	...	..	120	80	40	
10:15	..	...	..	...	..	..	Gas-oxygen anesthesia
	10						
10:20	..	...	..	...	..	..	Operation begun
	5½						
10:25	..	...	..	...	..	..	Exploratory laparotomy
10:30	..	108	24	120	80	40	
10:40	..	108	30	120	80	40	
10:45	..	112	24	130	90	40	
10:50	4½	96	..	130	90	40	
10:55	..	100	..	120	90	30	Gastro-enterostomy
11:00	5½	100	28	120	85	35	
11:05	..	108	..	125	90	35	
11:10	4½	96	28	130	90	40	
11:15	..	108	..	120	85	35	
11:20	5½	104	24	125	85	40	
11:25	..	112					
11:30	..	112	..	90	60	30	
11:35	..	...	..	90	65	25	
11:40	4½	112	..	100	70	30	
11:45	..	...	..	...	..	..	Operation completed

* Pupil contracted throughout. Recovery was normal save for phlebitis, ninth day.

4.1 per cent., and diminished in 57.2 per cent. of the cases.

These figures indicate that in this series of operations under anesthesia: In the dorsal position, the systolic pressure tended neither to increase nor diminish; in the lithotomy position, it tended to increase; in the combined lithotomy and Trendelenburg position, the increase in the systolic pressure was exaggerated; in the Trendelenburg position, the pressure tended to decline; and in the reverse Trendelenburg position, there was a marked tendency to decline in the systolic pressure.

The routine use of the reverse Trendelenburg or Fowler position following certain types of operation has undoubtedly contributed to unnecessary fatalities. Its use must be condemned unless the patient's condition has first been proved satisfactory by blood pressure tests.

EFFECT OF ANESTHESIA

By a light degree of anesthesia, in the absence of efficient dosimetric methods, we refer to a condition of anesthesia characterized by quiet respiration, a contracted pupil, with no increase in the secretion of perspiration, mucus and tears, and the pulse and blood pressure not markedly affected. The anesthetics, when carefully administered, do not usually cause a rise in blood pressure. With cyanosis, the systolic pressure is raised. If excitement be present, the systolic and diastolic pressures and the pulse rate are increased. A profound degree of general anesthesia is likely to be accompanied by a rapid decline in blood pressure. The spinal administration of anesthetics is followed by

a distinct drop in blood pressure which frequently reaches the danger zone; in one instance, the systolic pressure had declined to 20 mm. ten minutes after the administration.

The effect on blood pressure of overdosage with anesthetics is not generally realized. Cholecystectomy, hysterectomy and other major operations if free from hemorrhage may be performed under light anesthesia without marked effect on the blood pressure or the pulse rate. Under the overdosage of the anesthetic frequently employed, a tremendous decline in blood pressure is regularly noted.

INDEX OF SURGICAL SHOCK

A falling blood pressure with an increasing pulse rate is the most certain indication of the incidence of surgical shock. For determining the presence of shock, McKesson's[3] rule is an important guide. It is thus stated:

> With a pulse rate of 120 or more, a pulse pressure of 20 mm. or less, and a diastolic pressure of 80 mm. or less in a patient, who, at the beginning of the operation, had presented normal pressures, frank shock has occurred. If these low pressures are continued without improvement for more than half an hour, a vicious circle is generally established, which, without treatment, will cause the death of the patient.

In checking up the accuracy of this rule, it was found that in patients who were within the danger zone as determined by the rule for more than twenty-five minutes, the mortality rate was 69.23 per cent.[2]

CONCLUSIONS

Before every surgical operation, a physical examination should be made including an estimation of the blood pressure.

During operations, blood pressure tests provide an invaluable index to surgical shock, hemorrhage, and anesthetic overdosage.

The sphygmomanometer should be used not only in selected cases but also as a routine measure. In this way we shall become accustomed to normal variations in the blood pressure during operations and be able to detect the signs which indicate vital changes in the patient's condition.

The Fowler position should not be used after an operation until the circulatory condition has been proved to be satisfactory by blood pressure examinations.

131 Waterman Street.

3. McKesson, E. I.: Am. J. Surg. (anesthesia supp.) **30**: 2 (Jan.) 1916.

The Doctor's Dilemma.—The doctor, like his brother professional men, finds himself in a tight place in these days where income and outgo make such close connections. But the doctor has an additional grievance. The salaried man gets his pay, such as it is, on time. The doctor frequently has to wait for his and sometimes waits in vain. All the other bills apparently take precedence over the doctor's. Not, surely, because his services are less valued or because he is less in need, but more because he has the feeling that in his profession service should rank above profit. Were he to emulate the tradesman, he would run the risk of lowering the splendid tradition of his brotherhood. A minister almost never sues for his salary. A doctor must look at it in somewhat the same way. If the ethics of a profession stand in such wise, an obligation of honor surely lies on those whom the profession serves to accept the same high standard and live up to it.—Milwaukee *Journal.*

AN OUTBREAK OF BOTULISM*

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The outbreak of botulism reported here occurred in January, 1920, in an Italian family, living in the Bronx, New York City. The source of the toxin was shown to be a glass jar of factory packed California ripe olives. These olives, consumed as such and also as part of a salad, caused the death of six of the seven members of the family who ate of them. Bacteriologic examination of these olives was carried out by Mr. Paul Orr in the Department of Preventive Medicine and Hygiene of the Medical School of Harvard University; Dr. Charles Krumwiede of the Research Laboratories of the New York City Department of Health; the Microbiological Laboratory at Washington, D. C., and Dr. Gettlar of Bellevue Hospital, New York. At the present writing it is known that at least two of these laboratories have been successful in demonstrating the presence of *Bacillus botulinus* and its toxin. Mr. Paul Orr, working in this laboratory, has succeeded in isolating from the remainder of the olives used by the family a bacillus morphologically and culturally characteristic of *B. botulinus.* A Mandler filtrate of the liquor in which the olives not eaten were found proved toxic to animals as follows: When injected intraperitoneally into a 12 gm. white mouse, 0.004 c.c. of this filtrate caused death in seventy-four hours. One-tenth c.c. of this filtrate given to a 200 gm. guinea-pig by mouth resulted in death in sixty-eight hours. A 410 gm. guinea-pig which was given 3 c.c. of the same filtrate, by mouth, was found dead twelve hours later. One-tenth c.c. of antitoxin (Graham) injected intraperitoneally and simultaneously with 0.1 c.c. of the Mandler filtrate failed to protect an 11 gm. white mouse, death occurring in four hours. This indicated that the toxin in the olives was formed by an organism not homologous to the one used by Graham in the preparation of the antitoxin. The toxin was destroyed by heating to 80 C. for two minutes.

There were eight members in the D. family: Mary, the mother, aged 33; Paul, the father, aged 36; Dominica, a son, aged 16; Antonio, a son, aged 13; Angelo, a brother of Paul, aged 26; Dominick, a brother of Paul, aged 46; Lena, a daughter, aged 9, and Joseph, a son, aged 7. Dominick lived down town in Manhattan, but all the other members of the family lived together in the Bronx. Dominick frequently brought ripe olives to his brother's home, and it was he who furnished the jar of olives and made the salad that caused the deaths.

The diagnosis was not made until a necropsy performed on the body of the second member of the family to die suggested the possibility of food poisoning. It was then recalled that an outbreak of botulism, due to ripe olives (the Detroit outbreak), had been described in a very recent journal. Investigation of this clue led to the discovery that all the members of the family had partaken of ripe olives, and were presenting symptoms of botulism. A detective was immediately sent to the D. home with orders to confiscate all foodstuffs in the house.

* This work is a part of the investigation of food poisoning, conducted under the direction of Dr. M. J. Rosenau, professor of preventive medicine and hygiene, Medical School of Harvard University. The investigations are made under the auspices of the Advisory Committee on the Toxicity of Preserved Foods of the National Research Council, and under a grant of the National Canners Association.

The investigation here reported was begun after four of the family were dead, one so far gone that he could give no information, and one so ill that he could hardly talk. The two surviving ones were children, aged 9 and 7, respectively, and consequently could not be depended on for much information. As a result, many very desirable details are lacking in this report. Through the kindness of Mr. B. R. Hart, Chief, Eastern District, United States Food and Drug Inspection, I was able to work with the government inspectors, and thus secure much information which would not otherwise be available. Inspectors Olof Olsen and F. L. Wollard, U. S. Bureau of Chemistry, the Fordham Hospital, the New York City Health Department, the Medical Examiner's Office, and Dr. Louis J. Ferrara offered all the assistance possible.

EPIDEMIOLOGY

The olives responsible for this outbreak were "giant" size, California ripe olives, packed in 14 ounce (net weight) glass, hermetically sealed jars. They were not the same brand of olives that were responsible for the outbreaks in Canton, Ohio, and in Detroit in August and October, 1919, respectively. The present available information makes it seem quite probable that they came from an entirely different section of California than the olives responsible for the first two outbreaks. The olives concerned in the present outbreak were packed by a California olive company for a New York City distributing company. They bore the private label of the latter company. The distributing company ordered the olives, Oct. 11, 1917, and received them, April 4, 1918; but they rejected this shipment because the olives were not of good quality, branding them as "impossible" and declining to put them on the market under their label. The olives were then placed in a New York warehouse by the California company. They were resold and placed on the market by the California olive company, which in the meantime had undergone a reorganization. After considerable shifting and circulation among several New York distributers and wholesale dealers, thirty cases, 720 bottles, of these olives, were sold, Oct. 28, 1918, to the retail dealer who, in turn, sold the infected jar to Dominick. The New York distributing company protested, not only to the California company, but also to dealers in New York, the sale of these olives which they had rejected, under their private label; but the labels were not removed, and the olives continued on the market. During the shifting and circulation of these olives, several of the persons who handled them stated that many of the jars were spoiled and unfit for sale. One man, on purchasing a retail grocery store, threw away thirty-seven jars because they were not in good condition. Whether or not any of these numerous spoiled jars contained *B. botulinus* will probably never be known. Of the thirty cases sold to the grocer who sold the olives to Dominick, only five and one-half cases, 131 of the original 720 bottles, were on hand when confiscated by the health authorities. The remaining 589 bottles had been sold to customers in the neighborhood, none of whom, however, had made any complaint to the storekeeper. Whether or not any illness had occurred in these homes, attributed to other causes, since the sale of these olives began (Oct. 28, 1918) was not ascertained.

The exact date on which Dominick purchased the olives that caused the outbreak is not definitely known; but he says it was sometime after Jan. 1, 1920. Thus it will be noticed that the jar of olives responsible for the outbreak had been packed for at least twenty-six months, for it had been in New York City since October, 1917.

Among the things commandeered by the detective at the D. home was one-half bottle of ripe olives and two empty olive jars of the same size and bearing similar labels. The tin cover of the half filled jar was missing, but two other tin covers were found each bearing the same batch number. In view of all the facts concerning these olives, there is practically no doubt that they all came from the same batch. Dominick, before his death, stated that he had purchased these three jars of olives at the same store, one just before Christmas, one just after Christmas, and the third shortly after New Year's, 1920. They were carried to the D. home by Dominick as a delicacy, one jar at a time. Definite facts are not available, but it is reasonable to assume that one jar was consumed before another was opened, thus making it seem quite probable that the third jar was the one that contained the toxin.

As pointed out in the case histories, there is no definite proof that Mary, the first to die, ate ripe olives; but certainly all information available indicates that she opened this third jar of olives, January 8 or 9, and ate some of the olives, replacing the jar on its accustomed shelf, where it was later found by the other members of the family. The unsettled conditions and irregular status in the home following her death and funeral make it seem very probable that no olives were eaten until the following Tuesday night, January 13, when the rest of the family gathered at the home in the evening for supper. As accurately as could be attained, this meal consisted of macaroni with tomato sauce and a salad prepared from ripe olives, anchovies, pickled peppers, olive oil and vinegar. Dominick stated before his death that he prepared this salad, saying that the olives came from a jar taken from a shelf over the kitchen table, that this jar had been previously opened, and that "several" olives had been removed. He said that the other members of the family were seated about the table as he prepared this salad. Some of the olives were removed from the jar and placed on a plate, from which he took them one at a time, to cut them up for the salad. According to him the other members of the family helped themselves to these olives while awaiting the completion of the salad. He did not know whether some ate more heartily than others. He did state, however, that he noticed nothing wrong about the odor or taste of the olives, but on the contrary found them "very good," saying that he "liked them."

No statements concerning the odor and taste of the olives were obtained from other members of the family before they died. When asked if he washed the olives before putting them in the salad he nodded an affirmative answer, but this assertion is open to much doubt in view of the other facts of the case. Paul, the father, stated before his death that "everybody" ate olives. Lena, 9 years old, developed no symptoms, but insists that she ate one whole olive which her father handed her at her request. When asked why she ate no more she simply stated that she "didn't want any more," but said that she found neither the taste nor the odor disagreeable; that, in fact, she "liked them." She did not eat any of the salad. She said

that her brothers, Dominica and Antonio, were very fond of ripe olives, and that she saw them taking olives from the plate and open jar while the salad was being prepared. She also said that her mother was very fond of olives, and that she had seen her, on several occasions, remove olives from an open jar and eat them.

The exact hour at which this meal occurred is not known, but it is reasonable to assume that it was not before 6 p. m. Assuming such to be the case, definite symptoms of botulism had developed in all those who showed symptoms at all in from four to fifty hours after this meal.

REPORT OF CASES

CASE 1.—Mary, the mother of the family, was the first to become ill. Information concerning her death is found in the following statement made by Dr. L. J. Ferrara, her physician:

"Jan. 10, 1920, I was called in at 8 a. m. and saw the mother, Mary, in bed suffering from a choking sensation, with partial blindness. The history obtained was that she had been worrying and crying the entire night before. Vomiting began at 10 p. m., January 9. I looked in her throat and found it practically normal. I asked her to take a drink, which she was unable to swallow. I then examined the eyes and found them to react to light; she could recognize me and various objects which I held up to her; she said her vision was blurred. Temperature was normal. Her pulse was about 80, snappy and bounding. Reflexes were normal. There was no tenderness or pain in the abdomen. History as to possible poisoning from alcohol or food products was negative. At 12 noon (of the same day) I was recalled and found on my arrival that the patient was dead.

"On questioning, the husband, Paul, stated that his wife had been treated two years ago for kidney trouble; that since then she had had, off and on, puffiness of the eyes and some swelling of the limbs. In view of this history I signed her death certificate as 'uremia, chronic nephritis,' ascribing the dimness of vision to albuminuric retinitis."

No definite data concerning the consumption of ripe olives by her is available, but all the information at hand makes it seem quite probable that on January 8 or 9 she opened the contaminated jar of olives and ate two or three or more of them. The fact that ripe olives had been kept in the house, that they always stood on a shelf over the kitchen table, and that Mary was particularly fond of them and had been observed to eat olives taken from such a jar on previous occasions, makes such an assumption quite reasonable. This assumption is further substantiated by the fact that the jar of olives used later by the family in the salad was found open with "several" olives removed. No definite statement as to the number actually missing could be obtained. There is no way of telling how soon after eating olives her symptoms appeared or how long symptoms had been present before she was seen by her physician, although it is stated that she vomited ten hours prior to the visit of her physician. It seems reasonable to estimate that death occurred fifteen or twenty hours after the onset of symptoms.

CASE 2.—Dominica, a son, aged 16, became ill Tuesday, January 13, about 10 p. m. Dr. Ferrara's statement concerning him is as follows:

"I was next called, January 14, at 7 a. m., to see the son, Dominica. The history, obtained from the father and verified by the patient, was that he was seized on the evening of January 13, about 10 p. m., with a choking sensation and inability to swallow, with a partial loss of vision, vomiting and extreme weakness. He was unable to talk, owing to the pharyngeal paralysis, and wrote answers to my questions on a piece of paper. His mental condition at the time was normal. He did not complain of abdominal pains. Dominica was in bed and was unable to open his eyes completely, having a ptosis of both upper lids. His pulse was very weak, about 80. Temperature was normal. There was no tenderness of the abdomen. There was no diarrhea, the bowels not having moved at all. He could recognize various objects, such as matches, pencil and paper, but his vision was also dim. I washed his stomach with plain water, and removed a brownish, dark fluid, with a putrid smell, 4 quarts of water being required before the liquid returned clear. I put in through the tube a cup of strong black coffee to stimulate him, and ordered whisky. I sent an ambulance and had him removed to Fordham Hospital, where he arrived about 10 a. m., and died within a few minutes (thirty-two) after his arrival."

The diagnosis on admission to the hospital was "paralysis of the throat," "migraine" and "hysteria." He failed to react to one-thirtieth grain of strychnin sulphate, subcutaneously. He was mentally clear and conscious to the last, and there were no convulsions.

The onset of symptoms occurred four hours after eating the olives, and death occurred twenty-four and one-half hours after the onset of symptoms, or twenty-eight and one-half hours after ingestion of the olives. Information obtained from other members of the family shows that Dominica was unusually fond of ripe olives and always ate freely of them whenever they were available. This fact, together with the rapid onset of symptoms and the profuse vomiting (suggestive of gastric irritation due to a large amount of toxin) makes it seem quite probable that he partook more freely of the olives than the others. It was the necropsy on his body which led to the suggestion of food poisoning and later to the diagnosis of botulism.

CASE 3.—Paul, the father, aged 36, was the next member of the family to fall ill. Wednesday afternoon, January 14, he noticed that he had considerable difficulty in expectorating. When seen by his physician at 4 p. m., there was dimness of vision, diplopia, marked prostration and weakness, difficulty in swallowing and talking, and thick, glairy mucus in the mouth and throat which could be evacuated only with great difficulty. He immediately walked to the Fordham Hospital, the admission diagnosis being "paralysis of throat and partial blindness." His pupils reacted only sluggishly to light and accommodation. Other reflexes were not influenced. He vomited a small amount of material which was said to have a putrid odor. There was no diarrhea, but instead marked constipation. There soon developed ptosis of both eyelids and complete aphonia. He also complained of a distressing sense of pressure or weight in the epigastrium. Perspiration became very profuse. Edema of the soft palate and pharynx developed. As respiration became more difficult, cyanosis became more marked, and death, due to respiratory paralysis, resulted. Mental clearness was present throughout.

The highest recorded temperature was 99.8 F. The pulse rate never exceeded 92 beats a minute, and the greatest respiratory rate recorded was 24 a minute. The white blood count was found to be 10,600. The differential blood count was not abnormal and presented nothing of interest. Lumbar puncture revealed a sterile and otherwise negative fluid under pressure sufficient to cause one-half inch projection of the stream. The urine presented nothing of interest. The onset of symptoms occurred twenty-two hours after eating the olives, and death occurred forty hours after the onset of symptoms, or sixty-two hours after ingestion of the olives.

CASE 4.—Antonio, a son, aged 13 years, became ill at 8 p. m., Wednesday, January 14. He became much alarmed when a sensation of choking developed in his throat, and at 4:45 a. m., January 15, walked into the Fordham Hospital. His pupils were dilated and reacted sluggishly to light and accommodation. Other reflexes were not obtained. There was ptosis of both eyelids, dimness of vision, great weakness and prostration, difficulty in swallowing and speaking, with later development of complete aphonia, constipation, thick, glairy mucus in the throat, profuse perspiration

and marked respiratory difficulty and cyanosis, which progressively increased as death due to respiratory paralysis approached. At no time was mental clearness clouded.

The highest figures recorded for temperature, pulse and respiration were 100.2 F., 120 and 28, respectively. The pulse was irregular, but of good volume. The Wassermann test was negative. The urine showed a very few pus cells, but was otherwise uninteresting.

The symptoms appeared twenty-six hours after he had eaten the olives. Death occurred forty-three and one-half hours after the onset of symptoms, or sixty-nine and one-half hours after ingestion of the olives. It is not possible to say how many olives this patient consumed, though the available information makes it seem quite probable that he ate freely of them.

CASE 5.—Angelo, a brother of Paul, aged 26, also became ill at 8 p. m., Wednesday, January 14. His first symptoms were dryness of the throat, thick speech, difficult expectoration and a choking sensation. He was admitted to the Fordham Hospital at 3:30 p. m., January 15, the admission diagnosis being "paralysis of throat muscles." His pupils were dilated, reacting only sluggishly to light and accommodation. Other reflexes were present and active. There was ptosis of both eyelids, dimness of vision, great muscular weakness and prostration, difficult speech leading to complete aphonia, dysphagia, and some pain in the throat. Constipation was marked. The thick glairy, tenacious mucus was present in the throat. There was a distressing sense of pressure or weight "at the pit of the stomach." Profuse perspiration also was present. The difficulty in respiration grew progressively worse, and cyanosis developed culminating in respiratory paralysis with death, the patient maintaining mental clearness until shortly before death.

Temperature, pulse and respiration were not recorded in excess of 99.6 F., 120 and 24, respectively. The urine, other than a very few pus cells, presented nothing of interest.

The onset of symptoms occurred twenty-six hours after the olives had been eaten. Death occurred seventy-two hours after the onset of symptoms, or ninety-eight hours after ingestion of the olives.

CASE 6.—Dominick, aged 46, brother of Paul, walked into the Fordham Hospital at 4:30 a. m., Friday, January 16, complaining of a choking sensation and dimness of vision. On Thursday, January 15, he had felt considerable apprehension, and somewhat indefinite indisposition, but noticed nothing definite until about 8 p. m., when there was difficult expectoration and some dimness of vision. He followed rapidly the course of the others, presenting dilated pupils which reacted sluggishly to light and accommodation, but no involvement of other reflexes, diplopia, ptosis of both eyelids, great muscular weakness and prostration, difficulty in speaking and swallowing, constipation, mucus in the throat, profuse perspiration, a sense of chilliness, and gradual failure of respiration with accompanying cyanosis, leading to the terminal respiratory paralysis. He became somewhat irrational about an hour before death.

The highest recorded values for temperature, pulse and respiration were 99.6, 120 and 24, respectively. The urine contained a very few pus cells, but was otherwise negative.

SOME DETAILS OF THE OUTBREAK

Name and Age	Status in Family	Occupation	Date Olives were Eaten: January	Date Olives were Eaten: Hour	Number of Olives Eaten	Onset of Symptoms: January	Onset of Symptoms: Hour	Onset of Symptoms: No. of Hours after Eating Olives	Adm. to Hospital: January	Adm. to Hospital: Hour	Death: January	Death: Hour	Death: No. of Hours after Onset of Symp.	Death: Immediate Cause	Death: No. of Hours after Eating Olives	Symptoms and Physical Signs: Ptosis	Diplopia	Dimness of Vision	Dilatation of Pupils	Pupillary Reaction	Weakness: Prostration	Difficult Speech	Aphonia	Dysphagia	Mucus in Throat	Choking Sensation	Constipation	Vomiting	Epigastric Pressure	Mental Clearness	Profuse Perspiration	Sense of Chilliness	Difficult Respiration	Terminal Cyanosis	Highest Temperature	Highest Pulse Rate	High't Respiratory Rate	Reflexes
Mary 33	Mother	Housewife	8 or 9	?	?	9	10 p.m. ?	?	..	.....	10	12 m.?	15 or 20?	Respiratory paralysis	?	+	..	+	..	.....	+	+	..	+	+	+	+	+	..								
Dominica 16	Son	Shoemaker	13	6 p.m.	Salad and Olives	13	10 p.m.	4	14	9:55 a.m.	14	10:27 a.m.	24½	Respiratory paralysis	28½	+	..	+	..	.....	+	+	..	+	+	..	+	+	..	+	..	..	+	+				
Paul 36	Father	Shoemaker	13	6 p.m.	Salad and Olives	14	4 p.m.	22	14	4:40 p.m.	16	8:05 a.m.	40	Respiratory paralysis	62	+	+	+	..	Slug.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	99.8	92	24	+
Antonio 13	Son	School	13	6 p.m.	Salad and Olives	14	8 p.m.	26	15	4:45 a.m.	16	3:30 p.m.	43½	Respiratory paralysis	69½	+	..	+	+	Slug.	+	+	+	+	+	+	+	..	..	+	+	+	+	+	102.4	120	28	—
Angelo 26	Brother of Paul	Shoemaker	13	6 p.m.	Salad and Olives	14	8 p.m.	26	15	3:30 p.m.	17	8:00 p.m.	72	Respiratory paralysis	98	+	..	+	+	Slug.	+	+	+	+	+	+	+	..	+	+	+	+	+	+	99.6	120	24	+
Dominick 46	Brother of Paul	Shoemaker	13	6 p.m.	Salad only	15	8 p.m.	50	16	4:30 a.m.	17	10:11 p.m.	74	Respiratory paralysis	124	+	+	+	+	Slug.	+	+	..	+	+	+	+	..	..	±	+	+	+	+	98.9	120	30	+
Lena 9	Daughter	School	13	6 p.m.	One olive only	..	.....	.....	14	4:40 p.m.																											
Joseph 7	Son	School	...	.....	None																																

The first symptoms appeared fifty hours after he had eaten the olives. Death occurred seventy-four hours after the onset of symptoms, or 124 hours after ingestion of the olives.

This patient stated before his death that he felt quite sure he had eaten only about two olives which had been chopped up and put in the salad.

CASE 7.—Lena, aged 9, a daughter, was taken to the Fordham Hospital, January 14, with her father. She was presenting no symptoms at this time, but was admitted for observation merely as a precautionary measure. She was quite positive that she had eaten one ripe olive, January 13, during the preparation of the salad, but had eaten none of the salad. During the night of January 17, it was felt by some of the physicians that she showed some hesitancy in speech and slight ptosis of the right eyelid in addition to constipation. There was, however, no concensus as to the presence of these symptoms, so that it seems impossible to state with finality that she exhibited definite symptoms. She was later discharged from the hospital apparently none the worse for her experience.

Joseph, aged 7, a son, was taken to the home of friends after his mother's funeral, and was not present, January 13, when the other members of the family became infected. He ate no olives and developed no symptoms.

SYMPTOMS AND PHYSICAL SIGNS

The symptoms and physical signs were much the same in all six cases. As stated above, the onset of symptoms varied from four to fifty hours after ingestion of the contaminated food. In general, the onset was gradual and not of such a nature as to cause apprehension on the part of the patient. Reference to the accompanying chart and the individual case histories will reveal the details of each case.

The incidence and progression of symptoms was not identical in all the cases, but followed the same course in general. The first intimation of trouble seemed to be rather an indefinite indisposition, followed rapidly by muscular weakness which gradually increased to great prostration. Difficulty in expectorating, thick speech, dryness of the mouth and dysphagia were among the first symptoms noted, seemingly due to mucus in the throat and perhaps also to beginning paralysis of the pharyngeal muscles. As the disease progressed the mucus became thicker, glairy and more tenacious, and could not be evacuated either up or down. It was the source of much discomfort, and the patients made vain efforts to remove it with their fingers or handkerchiefs. As the paralysis of the muscles of the throat increased, swallowing became more difficult and the ability to speak diminished toward an ultimate complete aphonia. A sensation of choking, with more or less sense of constriction about the throat, was noticed early in the disease by four of the patients.

The various eye symptoms were among the earliest manifestations. Dimness of vision, a blurring and mistiness, was noted by all the patients. Diplopia was remarked by only two of the six, but it is quite probable that it was present in the others. Dilated, sluggishly reacting pupils were observed in three cases. Other reflexes were present and active in three of the four cases examined. Ptosis of the eyelids invariably developed. Nystagmus was observed in one case.

Vomiting occurred in three of the cases and, as far as the evidence was available, was associated with large doses of toxin, which apparently produced gastric irritation prior to paralysis. In this outbreak, as in the Detroit cases reported by Jennings, Haass and Jennings,[1] the patients who vomited at the onset died sooner than the others. Diarrhea was not present in any case but, on the contrary, constipation was evident in all, evidence which may be interpreted as local, peristaltic paralysis. A feeling of pressure and "weight at the pit of the stomach" was remarked by two of the patients. A feeling of chilliness and profuse perspiration was present in four cases. Mental clearness, maintained until shortly before death, was strikingly characteristic. All the patients were drowsy and somewhat comatose immediately before death. One patient became somewhat irrational about an hour before death. Dyspnea did not manifest itself so much in rapidity as in difficulty of breathing. The highest respiratory rate recorded for any of the six patients was 30 a minute. The accessory muscles of respiration were called more and more into play as the intoxication progressed, inspiration becoming more and more difficult and finally ceasing quietly when the muscles refused to function any longer. Cyanosis was observed in all cases as respiration weakened and the end approached. Thirst, vertigo, abdominal pain and diarrhea were absent in all cases.

The pulse remained of good volume and good quality throughout, although somewhat rapid and variable in rate. The highest rate recorded was 120 a minute. The temperature reaction was not remarkable, 102.4 F. being the highest recorded, and this followed the intravenous injection of antitoxin. A leukocyte count was made on only one patient, and this was found to be 10,600; the differential count was not abnormal. A lumbar puncture on the same patient revealed nothing other than somewhat increased pressure. The urine was negative except for a very few pus cells found in three of the four patients whose urine was examined.

TREATMENT

Elimination, stimulation and antitoxin were the fundamental bases of treatment. Stimulants, such as strychnin sulphate, atropin, camphor-in-oil, digitalis and coffee enemas were administered as it seemed advisable. Inhalation of oxygen was also used for short periods. Gastric lavage was performed as soon as the patient reached the hospital. Cathartics, for the most part, could not be swallowed. Magnesium sulphate and croton oil, when introduced through the stomach tube, brought no results. High colonic enemas usually brought good results. Nutrient enemas were also used, for the patients had difficulty in swallowing even liquids. Warm blankets contributed much to their comfort.

Antitoxin was not available until four patients were dead and one other was so far gone that he was past aid. This left only one patient, exhibiting definite symptoms, to whom the serum was administered. This patient was Dominick, aged 46. At the time the antitoxin was given, just forty-eight hours after the onset of symptoms, he was presenting the following manifestations of the disease: dimness of vision, diplopia, ptosis of both eyelids, great difficulty in speaking, inability to swallow, much glairy, tenacious sputum in the throat, great prostration and weakness, profuse persipration, and respiratory difficulty. Twenty-five c.c. of serum obtained from Professor Graham of the University of Illinois were injected intravenously at 7:15 p. m. At 8:30 p. m. there was no apparent change in his condition. At 9:30 p. m. the temperature, pulse and respiration were recorded as 102.4 F., 124 and 30, respectively. The patient grew gradually weaker and ceased to breathe at 10:11 p. m., three hours after the antitoxin was administered.

Lena, the 9 year old daughter who ate one olive, was given two intravenous injections of 15 c.c. each, about twelve hours apart, of an antitoxin received from the Bureau of Animal Industry at Washington, D. C. As mentioned in the case history, it does not seem possible to state that she was presenting definite and clear-cut symptoms. Such symptoms never did develop, but to what degree the antitoxin was responsible for their failure to develop will probably never be known. It is not improbable that symptoms would not have developed if no antitoxin had been administered. Joseph, aged 7, was given one 15 c.c. intravenous injection of the same serum, merely as a prophylactic measure, for

1. Jennings, C. G.; Haass, E. W., and Jennings, A. F.: An Outbreak of Botulism, J. A. M. A. 74:77 (Jan. 10) 1920.

at that time there was some uncertainty as to whether or not he had partaken of any of the olives.

Taken all in all, the serum therapy was inconclusive. The serum administered to Dominick was probably given too late to expect favorable results. Furthermore, the serum administered was not prepared from a homologous strain of *B. botulinus*, a fact that would render it ineffective in this case. As stated above, the Graham antitoxin failed to protect laboratory animals against the toxin present in the olives. The serum administered to Lena, presumably derived from a homologous strain, cannot be said definitely to have aborted the development of the disease.

THE EYE AS A PORTAL OF INFECTION IN RESPIRATORY DISEASES *

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The main channel of infection in respiratory diseases, and especially in pulmonary tuberculosis, has confused scientific men for a long time. An effort to avoid infection, especially in the acute diseases, has led to the introduction of many methods of protection, the latest of which is the gauze mask. As complicated as this problem has been in the study of the acute respiratory diseases, it has proved even more baffling and confusing in pulmonary tuberculosis, which disease accounts for at least three fourths of the deaths attributed to the tubercle bacillus. Much of the confusion is of course due to the improper comprehension of the problem at hand and the application of unpractical methods of experimentation and conclusions drawn therefrom. Thus have been overemphasized at intervals prenatal infection, alimentary infection and other phases.

The problem that confronts us in the prophylaxis of pulmonary tuberculosis, though differing slightly, is practically the same as that in the acute respiratory diseases. We have to deal in both cases with organisms highly virulent[1] and specific or parasitic for the host, taking hold at the least provocation and producing clearly defined and characteristic pathologic changes, in contradistinction to those produced by the more saprophytic micro-organisms, which occur widely distributed in nature or which cause spontaneous disease in other species.

MODE OF INFECTION IN TUBERCULOSIS

Controversy has revealed diverse opinions regarding the exact portal of infection in pulmonary tuberculosis. Koch in 1884 maintained that tubercle bacilli entered the lungs with the inspired air and produced their lesions wherever they came to rest in the lungs. This view found almost universal acceptance for many years, and the dispute centered about the question as to whether dry and pulverized sputum (Cornet), or fluid droplets (Flügge) freshly expelled from the mouths of phthisical patients, play the more important part in propagating the disease. As a matter of historical interest it may be noted that shortly after the rediscovery of the infectious nature of tuberculosis by Villemin, Chauveau in 1868 held that the alimentary canal might be the portal of entry in tuberculosis even more frequently than the air passages, an idea probably made evident by the large percentage of ingestion tuberculosis from bovine sources in those days. In 1904, von Behring uncompromisingly maintained the intestinal origin of pulmonary tuberculosis irrespective of age. Calmette and Guérin[2] in 1905 strongly supported this theory, though they did not agree with von Behring's statement that such infection occurs commonly in infancy. On the contrary, they believed that the lymphatic glands are more permeable in the adult than in the child, and that infectious micro-organisms may pass through them from the intestines to the lungs by way of the thoracic duct. To add to the confusion of this entire problem is the rise of the theory of latency or the residence of tubercle bacilli in the lymph glands and tissues free from all anatomic changes, as maintained by Baumgarten. Such latency has been recently observed by Wang,[3] who found bacilli in three of thirty-two cases studied. He reviews the literature, but in all of the cases reported the time element in man is impossible of determination and Wang found that tubercle bacilli could be latent in guinea-pigs as long as 104 days (a comparatively short time of study for enlightenment in this problem).

THE EYE AS A PORTAL OF INFECTION

In considering so important a problem as the avenue of infection in pulmonary tuberculosis, it is conceivable that the question resolves itself not so much into producing effects at the expense of practicability as to considering the problem from the standpoint of facts. For a proper interpretation of facts the available data seem still to be lacking in definiteness, since dosage and the possibility and repetition of infection have been left entirely out of consideration. In the same manner a consideration of the eye as a channel of infection had been entirely neglected until Maxcy[4] recently demonstrated that this might be one of the least protected regions of the body, giving access to pathogenic micro-organisms by droplet infection, especially from man to man. He found that *B. prodigiosus* introduced into the conjunctival sac can be recovered from the nose in five minutes, from the throat in fifteen minutes, and from the stool in twenty-four hours. With the mouth and nose protected by gauze, organisms were found in the nose and nasopharynx after droplet spraying at a distance of from 3 to 4 feet.

Maxcy states that from the nasopharynx the micro-organisms may follow one of three courses: 1. They may pass outward through the mouth with the sputum. 2. They may be carried into the larynx and reach the lower respiratory tract. 3. They may be carried downward into the esophagus with the swallowing movements, and perish in the intestinal canal or be excreted with the feces. He says that the latter is probably the most frequent course, as he obtained the bacilli in one of three subjects whose stools were tested.

A number of points of direct interest in the problem of the eye as an avenue of infection were left unsettled by Maxcy. These factors seemed worthy of further investigation: whether the micro-organisms really

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* From the Research Laboratories, National Jewish Hospital for Consumptives.

1. Corper, H. J.: Are All the Tubercle Bacilli Found in the Sputum Virulent? J. A. M. A. **70**: 1281 (May 4) 1918.

2. Calmette, A., and Guérin, C.: Ann. de l'Inst. Pasteur **19**: 601. 1905.

3. Wang, C. Y.: Lancet **2**: 417 (Sept. 2) 1915.

4. Maxcy, K. F.: The Transmission of Infection through the Eye, J. A. M. A. **72**: 636 (March 1) 1919.

ever reached the respiratory tract below the epiglottis and vocal cords and how long they remained there; what course the micro-organisms followed after instillation in either eye; how long they persisted in the nose, pharynx or larynx (the studies reported by Maxcy were of only thirty minutes' duration); and since it has been suggested, though not authentically demonstrated, that micro-organisms can enter the lungs by way of the intestinal tract in experimental animals, whether this could occur in man. It was with a view to corroborating and elaborating the work initiated by Maxcy that the experiments to be described were performed.

EXPERIMENTAL DATA

The experiments were carried out on patients with pulmonary tuberculosis who were capable of expectorating (lung) sputum. These people were chosen for the twofold purpose of obtaining satisfactory pulmonary material and also with a view to using patients with a respiratory system of reduced protective mechanism such as may occur acutely at any time in any person but not often in a manner available for satisfactory experimental purposes.

Time Factor.—In order to gain an idea of the rate of appearance and disappearance of the micro-organisms from the nose and various parts of the pharynx after eye instillation, a series of seven cases were thus tested with the results given in Table 1.

TABLE 1.—APPEARANCE AND DISAPPEARANCE OF B. PRODIGIOSUS FROM THE NASOPHARYNX AFTER EYE INSTILLATION

	Appearance		Disappearance	
Location	Earliest	Latest	Earliest	Latest
Nose	5 min.	15 min.	45 min.	2¼ hrs.
Pharynx	10 min.	15 min.	1½ hrs.	2¼ hrs.

A brief survey of this table indicates that *B. prodigiosus* appears and disappears from the nose and throat after eye instillation with fair regularity and within a definite time in different persons.

TABLE 2.—DISTRIBUTION OF B. PRODIGIOSUS IN THE MOUTH AFTER RIGHT EYE INSTILLATION

Location	Time Interval after Instillation in Hours Case	½	1	1½	2	2½
Hard palate	Y	—	—	—	—	—
	St. J.	—	+	—	—	—
	Y	+	—	—	—	—
Uvula	St. J.	—	+	+	—	—
	Y	+	+	+	+	—
Right tonsil	St. J.	—	+	+	—	—
	Y	—	—	—	—	—
Left tonsil	St. J.	—	—	—	—	—
	Y	+	+	+	+	+
Posterior nasopharynx	St. J.	+	+	+	+	—

Course of Micro-Organisms.—In order to determine whether the micro-organisms instilled into the eye follow a definite course, a suspension of *B. prodigiosus* was dropped into the right eye, and various parts of the nasopharynx were tested with the results shown in Table 2. An examination of this table reveals the tendency of the micro-organisms to follow definite paths. If instilled into the right eye the organisms are found on the right side of the nasopharynx and on the right tonsil, while the left side is free from them, as are also the anterior portions of the mouth. Instillations of strong solutions of argyrol into the eye were also found to follow a similar definite course in the nasopharynx.

The direct determination of the presence of micro-organisms in the trachea and on the vocal cords, which might indicate a downward passage into the lower respiratory tract after eye instillation, is admittedly difficult, so that a number of procedures were employed for this purpose. It would be unreasonable to expect the determination of the presence of *B. prodigiosus* in the washed sputum itself, and their presence in the unwashed sputum, especially while the nasopharynx was still positive, is obviously open to criticism. There were two other procedures to be considered: the passing of a tube into the trachea, obtaining through this tube a swab of the trachea and vocal cords, and the examination of the (lung) sputum after the nasopharynx and mouth were proved negative by careful and repeated examinations.

TABLE 3.—LAST POSITIVE CULTURE OF B. PRODIGIOSUS FROM PHARYNX AND FROM SPUTUM AFTER EYE INSTILLATION, IN HOURS

From Pharynx	From (Lung) Sputum
1½	2
1¾	1¾
1½	—*
1½	2½
2	2
1½	2
2	2
1¾	—*
2¾	2½
2¼	2½
2¼	2¼
2	—*
2	—*
2¼	2¼
1¾	2¾
2½	—*
2	2¾
2	—*
1¾	—*

*In these cases the sputum was negative before the pharynx.

A series of ten cases were examined by passing a metal tube into the trachea from four to six hours after the instillation of *B. prodigiosus* into the eye. The nasopharynx was negative for *B. prodigiosus* in these cases after about two hours. It was found that only a small area could be thus swabbed; but two of the ten cases revealed positive cultures from the vocal cords, one within six hours, and the other four hours after eye instillation. In a series of twenty cases the nasopharynx and sputum were examined to determine whether the sputum was positive for *B. prodigiosus* after eye instillation for a longer period of time than was the nasopharynx. The time of appearance of the last positive cultures from the nasopharynx and pharynx and from the sputum in the twenty cases is given in Table 3.

Of the twenty cases studied, there were seven cases, or 35 per cent., in which the lung (sputum) specimens were positive on repeated examination after the pharynx was negative. If these seven cases are considered, the lung specimen was positive on an average of 0.6 hours (minimum, one-quarter hour; maximum, one hour) after the pharynx was negative on repeated examination. One case in the series was of interest because of the fact that a definite positive culture of *B. prodigiosus* was obtained from the sputum one week after the instillation into the eye, the pharynx being repeatedly negative in the interval following the first two hours and also at the time of obtaining the positive culture from the sputum. Three other

cases, observed through an interval of nine days after eye instillation, gave negative sputums for *B. prodigiosus* after the initial few hours following instillation.

DISTRIBUTION AFTER INGESTION

The study of the distribution of *B. prodigiosus* after ingestion was divided into the persistence of the organism in the mouth, the appearance in the sputum, and the appearance in the feces after ingestion. In none of the cases shown in Table 4 was *B. prodigiosus* found in the sputum during the first two hours after the mouth and pharynx were negative.

TABLE 4.—PERSISTENCE OF B. PRODIGIOSUS IN THE MOUTH AFTER ORAL INGESTION, IN HOURS

Number of Cases	Time of Persistence		
	Shortest	Longest	Mean
11	4¼	5	4½

In four cases the nose was examined for *B. prodigiosus,* and in no case were the organisms found within one hour after oral ingestion, while the mouth and pharynx were positive during this time.

In a series of ten cases, *B. prodigiosus* was given by mouth and the sputum and feces were examined after six hours and at daily intervals for ten days. In none of these cases was a positive culture obtained from the sputum; the organisms were recovered from the feces in only two of the ten cases during the first twenty-four hours, after which no more positives were obtained.

TABLE 5.—EFFECT OF HYDROCHLORIC ACID AND HYDROCHLORIC ACID AND PEPSIN ON THE VIABILITY OF B. PRODIGIOSUS IN VITRO

	Concentration of Hydrochloric Acid											
	Alone (Normal Per Cent.)*						With 0.2 Per Cent. Pepsin in Addition					
Exposure at 37 C.	0	0.5	1.0	1.5	2.0	2.5	0.0	0.5	1.0	1.5	2.0	2.5
5 min.	+	+	+	+	—	—	+	+	+	+	+	—
15 min.	+	+	+	+	—	—	+	+	+	+	+	—
25 min.	+	+	—	—	—	—	+	+	+	+	+	—
40 min.	+	+	—	—	—	—	+	+	+	+	—	—
60 min.	+	+	—	—	—	—	+	+	+	+	—	—
2 hr.	+	+	—	—	—	—	+	+	+	—	—	—
3 hr.	+	+	—	—	—	—	+	+	+	—	—	—

* One per cent. normal acid is equivalent to 0.0365 per cent. by weight of hydrogen chlorid, and the other figures are in proportion.

In order to find a possible explanation for the inability to recover *B. prodigiosus* from the feces after the ingestion of large amounts of the culture, the effect of various concentrations of hydrochloric acid and of a mixture of pepsin and hydrochloric acid on suspensions of the bacilli was studied with the results given in Table 5. An examination of this table reveals that the cultures of *B. prodigiosus* used in these experiments are highly susceptible to the action of hydrochloric acid, alone or in the presence of pepsin, 0.07 per cent. by weight of hydrochloric acid killing within five minutes.

SUMMARY

The eye must be considered as one of the important portals of infection in respiratory diseases, and, although the greater part of the infectious material entering by way of the eye is subsequently swallowed and passes into the gastro-intestinal tract, a small but definite portion of it finds its way into the larynx and trachea, where it may persist even as long as a week (as was noted in one case studied).

In its passage from the eyes, the infectious material traverses a definite channel dependent on which eye it has entered or into which it has been introduced. Infectious material that is ingested is far less likely to enter the respiratory tract than that entering by way of the eye or nose.

MATERNAL MORTALITY

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There is a general impression among physicians that there has been a great improvement in maternal mortality during the past half century. This impression is based on the present favorable maternal mortality in hospital and dispensary services, and not on a comparison of mortality and birth statistics.

In 1917, Grace L. Meigs[1] made a careful study of maternity mortality from all conditions connected with childbirth from the available records of the United States and certain other countries. In answer to the question, Is the death rate from childbirth falling? she says (page 17):

> According to the evidence available, these death rates are apparently not decreasing. During the twenty-three years ending in 1913, in this country no definite decrease in the death rate from the diseases caused by pregnancy and confinement can be demonstrated; nor can any decrease in the death rate from puerperal septicemia be shown.

She says further of the deaths from diseases of pregnancy and the puerperal state (page 22):

> In order to make possible a comparison of the death rate from these causes for fifteen foreign countries with those for the United States, an average rate has been computed for the years 1900 to 1910 for each of the countries, using the same method as that in use in the United States. When the sixteen countries studied are arranged in order, with the one having the lowest rate first, the death registration area of the United States stands fourteenth on the list. Only two countries, Switzerland and Spain, have higher rates; many of the countries, however, show rates differing but little from that of the United States. Markedly low rates are those of Sweden (6), Norway (7.8), and Italy (8.9); a strikingly high rate is that of Spain (19.6). [The ten year average for the United States was 14.9 per hundred thousand population (Table 1).]
>
> The death rate from child birth per thousand live births is not available for the death registration area of the United States, but can be given only for the small number of states and cities included in the provisional birth registration area and for one year, 1910. This rate, 6.5, is considerably higher than that for 1910 of any of the countries studied.

However, a birth registration area was established in 1915, and eventually there will be records from which it will be possible to compute our maternal mortality on the basis of the number of live births. A comparison of the birth rate in the birth registration area with the mortality rate in the death registration area for 1915 and 1916 would indicate that in 1915 one mother died in every 164 live births, and in 1916 one for every 152 live births. The ratio in 1910 was one mother for every 154 live births.

During the past thirty years, deaths from many diseases have been reduced to a fraction of their former toll. Between the years 1890 and 1915, the records of the death registration area of the United States

1. Meigs, Grace L.: Maternal Mortality, U. S. Dept. of Labor, Children's Bureau, Miscellaneous Series 6, Bureau Publication 19, 1917.

show that the deaths from tuberculosis per hundred thousand population dropped from 252 to 145.8; pneumonia, from 186.9 to 82.9; diphtheria and croup, from 97.8 to 15.7; diarrhea and enteritis under 2 years, from 139.1 to 59.5; typhoid fever, from 46.3 to 12.4. The death rate from diseases caused by pregnancy and the puerperal state in 1890 was 15.3, while in 1915 it was 15.2. The maternal mortality rate in 1916 was 16.3 per hundred thousand population.

In the face of all available statistics, we are not justified in believing that the average woman is benefited by the advances that have been made in scientific obstetrics during the past half century. Few realize that for all women of childbearing age, childbirth is the second greatest cause of death. For the year 1915 in the death registration area of the United States, there were, among women aged 15 to 45, 29,200 deaths from tuberculosis; 10,134 from childbirth, of which 4,173 were from puerperal septicemia; 8,766 from the various circulatory disturbances; 6,458 from all digestive disturbances; 5,549 from pneumonia, all types; 5,424 from cancer and other malignant tumors; while for these ages syphilis was reported as the cause of death 647 times and gonorrhea 174 times.

Additional data to prove the great danger of pregnancy and labor are given in Table 2, which is based on a medico-actuarial mortality investigation. The table has been modified and rearranged to make it available for general study and comparison with other statistics. This insurance record shows that for all women insured during the childbearing period, the diseases of pregnancy and the puerperal state are the second greatest cause of death; and for all women insured, maternity ties with nephritis and Bright's disease as the fifth greatest cause of death.

TABLE 1.—AVERAGE DEATH RATES PER HUNDRED THOUSAND POPULATION IN CERTAIN COUNTRIES FROM DISEASES CAUSED BY PREGNANCY AND CONFINEMENT, 1900 TO 1910*

	Death Rate per Hundred Thousand Population from Diseases Caused by Pregnancy and Confinement		
Country	Total	Puerperal Septicemia	All Other
Sweden**	6.0	2.4	3.5
Norway	8.1	4.1	3.9
Italy	8.9	3.3	5.7
France†	10.3	4.8	5.5
Prussia‡	10.4	4.7	5.8
England and Wales	11.1	4.7	6.5
New Zealand	12.4	3.1	9.3
Ireland§	12.9	4.5	8.4
Hungary	13.3	3.6	9.8
Japan**	13.3	4.5	8.8
Australia‖	14.1	4.7	9.4
Belgium‡	14.8	5.8	9.0
Scotland**	14.8	5.5	9.4
United States¶	14.9	6.5	8.3
Switzerland	15.2	6.4	8.8
Spain**	19.6	12.3	7.3.
Austria	#	6.6	#

* Table XII, p. 56, of "Maternal Mortality," by Meigs (Footnote 1).
** Rates based on figures for 1901 to 1910.
† Rates based on figures for 1906 to 1910.
‡ Rates based on figures for 1903 to 1910.
§ Rates based on figures for 1902 to 1910.
‖ Rates based on figures for 1907 to 1910.
¶ Rates based on figures for death registration area which increased from year to year; in 1900 it comprised 40.5 per cent. of the total population of the United States, and in 1910, 58.3 per cent.
# Figures not available.

A study of these insurance figures suggested that from insurance records additional valuable information might be obtained regarding the frequency with which individual families are affected by death from common causes such as tuberculosis, childbirth and malignant tumors. Through the courtesy of Dr. J. W. Fisher, medical director of the Northwestern Mutual Life Insurance Company of Milwaukee, I have examined the family records of 10,000 applicants. The first series of 5,000 showed that one applicant for life insurance in every seventeen reported a mother or sister or both as having died from the immediate effects of childbirth; 1 in 27 from tuberculosis, and 1 in 47 from cancer or other malignant tumor. The second series of 5,000 cases showed childbirth 1 to 17.7; tuberculosis 1 to 29.7, and malignancy 1 to 42.7. In view of the similar ratios in the two series of 5,000 each, it was not considered advisable to give more time to this line of investigation.

TABLE 2.—MOST COMMON CAUSES OF DEATH AMONG INSURED WOMEN IN THE UNITED STATES*

	Percentages of Total Deaths of Women Insured; Age at Time of Applying for Insurance				
Cause of Death	15-29	30-44	15-44 Average	45 and Over	All Ages Average
Tuberculosis of the lungs	27.2	13.9	20.5	4.0	15.0
Cancer and other malignant tumors	2.7	11.8	7.3	13.3	9.3
Pneumonia	6.1	7.5	6.8	10.7	8.1
Organic diseases of the heart	3.9	5.3	4.3	10.7	6.4
Diseases of pregnancy and puerperal state	12.6	5.6	9.1	....	6.1
Nephritis and Bright's disease	4.2	6.4	5.3	7.4	6.1
Typhoid fever	6.3	4.3	5.3	1.3	4.0
Cerebral hemorrhage and apoplexy	1.5	3.9	2.7	10.3	5.2
Appendicitis and typhlitis	2.3	1.5	1.9	0.3	1.4
Diseases of the uterus	2.2	3.3	2.8	1.0	2.2
Cirrhosis of the liver	0.4	0.8	0.6	1.0	0.7
Diabetes	0.7	0.9	0.8	1.8	1.1
Suicide	2.1	1.4	1.7	0.5	1.3
Accident	3.7	4.0	3.8	2.6	3.4
All other causes of death	24.7	29.4	27.0	35.1	29.7
	100.0	100.0	100.0	100.0	100.0

* This table does not indicate the ages of the women at the time of death. The table is based on the Medico-Actuarial Mortality Investigation, compiled and published by the Association of Life Insurance Medical Directors and the Actuarial Society of America, New York, 2: 52, 1913.

The examination of 10,000 family histories as given by applicants for life insurance would seem to indicate that among the class of men who have applied for life insurance during recent years, maternity has been a cause of death in more families than either tuberculosis or malignant tumors. In comparing these figures with figures already given from the actual numbers of deaths based on the causes recorded on the death certificates, it must be remembered that tuberculosis is most frequent and most fatal among the very poor—a class excluded from the life insurance records except as a percentage of applicants may have been born in poverty either in this country or abroad. Another and possibly more important reason for the great frequency of childbirth over tuberculosis arises in the practice of physicians in giving tuberculosis or other general cause on the death certificate of the woman who dies shortly after delivery without reference to the childbirth. The layman, on the other hand, remembers the childbirth and not the cause of death recorded on the death certificate.

The records of large maternity hospitals indicate that most of the deaths from puerperal sepsis are preventable when a rigid surgical technic is employed in the delivery room, and that many of the deaths from other complications of pregnancy, labor and the puerperium are unnecessary. The continued high maternal mortality constitutes a standing reproach to all civilized peoples in general, and to the medical profession in particular.

The teaching of obstetrics has perhaps not kept pace with that of general medicine and general surgery, but for this the teachers of obstetrics are only partially responsible. Obstetrics has always been the most time consuming and at the same time the poorest paid work

a physician undertakes. Comparatively few physicians have specialized in this branch of surgery. Hospital facilities for obstetric cases are most inadequate when compared with those for general surgical or medical cases. Comparatively few hospital interns have any real training in obstetrics. Most physicians in general practice have to handle all types of labor with little training and under the most unfavorable conditions.

The present need in obstetrics is not so much the discovery of the cause of certain rare and obscure conditions, but rather the application of present knowledge. The infection of obstetric patients should be prevented by elimination of the unclean midwife—both male and female. This may be accomplished by systematic and long continued education of the people and the profession. The toxemias of pregnancy should be prevented through careful prenatal supervision. Most of the severe toxemias are preventable. The delivery mortality and morbidity should be reduced to the minimum by ample hospital facilities. There is no longer any question about going to the hospital for even the most simple operation. Why continue the practice of doing obstetric surgery in a home with lack of facilities and questionable asepsis?

SUMMARY AND SUGGESTIONS

1. Mortality statistics show that for women of childbearing age (15 to 45), childbirth is the second greatest cause of death. The records of life insurance companies show that for all women who are insured under 45 years of age, the diseases of pregnancy and the puerperal state are the second greatest cause of death. Childbirth ties with nephritis and Bright's disease for fifth place as a cause of death among insured women.

2. A study of 10,000 family histories as given by applicants for insurance in the Northwestern Mutual Life Insurance Company shows that one in every 17.3 associates the death of a mother or sister or both with childbirth, 1 in 28.3 with tuberculosis, and 1 in 45 with malignancy. It is believed that a considerable percentage of these deaths from childbirth were recorded on the death certificates as being due to tuberculosis, heart disease, etc., and that the applicant for insurance remembered the associated childbirth and not the cause of death given on the death certificate. Our present mortality records do not show the frequency with which childbirth is a contributing cause of death.

3. The present maternal mortality may be greatly reduced by application of our present obstetric knowledge. Systematic education similar to that used in combating tuberculosis is needed.

4. Increased hospital facilities and nursing service must be provided. The state should furnish assistance in giving poor women the proper care during pregnancy, labor and the puerperium. For the present, more hospital beds may be made available by sending women home by ambulance early in the puerperium and caring for them through an outpatient nursing service.

5. The clinical teaching of obstetrics must be improved. Outpatient services are at present necessary; but as soon as beds are available, these women should all be brought to the hospital for delivery. Students get a midwife idea of obstetrics from the so-called simplified technic used in many outpatient services, and reflect these methods in the continued high maternal mortality. Few interns have an obstetric training comparable with that received in medicine and surgery. They go into general practice, and must meet the emergencies of obstetric practice with the inadequate training received as an undergraduate.

6. Churches could aid greatly in making motherhood safer, if on Mother's Day special collections were taken for the obstetric services of our various hospitals. In addition to the money raised, such a collection would have an educational value by calling the people's attention to the great obstetric needs.

141 Wisconsin Street.

Clinical Notes, Suggestions, and New Instruments

A SIMPLE TECHNIC FOR CONCENTRATING SPUTUM*

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Greenfield and Anderson[1] have recently described a simple technic for the sedimentation of tubercle bacilli in the sputum. In brief, this method consists in placing a small amount (5 c.c.) of sputum in a centrifuge tube, adding two volumes of 1 per cent. sodium carbonate in 1 per cent. phenol (carbolic acid), shaking well, and placing in the incubator for from twelve to twenty-four hours. The tubes are then centrifuged for about fifteen minutes and smears made from the sediment after pouring off the supernatant fluid.

The advantages claimed by the author for this method are: (1) rapidity; (2) sterility of sputum when taken from the incubator, and (3) the resemblance of the films to direct smears. They also made controls of their method, using the full technic of Ellerman and Erlandsen for comparison, and report a distinct advantage in the simplified method.

This technic was recently tried out at the Loomis Sanatorium, and with some slight modifications, has been adopted in place of the more cumbersome Ellerman and Erlandsen technic.

The sanatorium uses the standard 4 ounce blue glass pocket sputum flasks ("Cleaneasy") for collecting sputum for concentration or sedimentation. As these are graduated, it is a simple matter to add the required amount of sodium carbonate solution directly to the sputum. The cork is replaced and the contents are thoroughly mixed by shaking. If the bottle is more than one-third full, which is usually not the case, a portion of the contents can be discarded, or treated in the same way in another bottle.

Placing in the incubator (37.5 C.) overnight has generally been found sufficient for digestion. On removal, the bottle is again shaken and the contents poured into a 50 c.c. plain, lipped centrifuge tube. In case there are more than 50 c.c. in the bottle, a sufficient amount is discarded before shaking. These tubes are centrifuged for fifteen minutes in an electric centrifuge, the supernatant fluid is poured off, and smears are made in the usual way.

In comparing the two methods, thirty-seven specimens were examined. After thorough shaking of the sample of sputum, the contents of each bottle were divided: one part was used for the standard Ellerman and Erlandsen (E. & E.) method, and the other for the simplified Greenfield and Anderson (G. & A.) technic. The G. &. A. method showed nine positives and twenty-eight negatives, the E. & E. method eight positives and twenty-nine negatives. The results were the same for each specimen by the two methods, with the one exception in which the E. & E. method was negative. Each slide was thoroughly examined by two examiners, and separate records were kept and compared after all slides were scrutinized.

The advantages of the G. & A. method, besides its simplicity and cleanliness, are that the sediment yields better smears and the stained bacilli are more distinct. This is probably because digestion is not quite as complete as in the E. & E. method, but our limited experience seems to show that it is sufficient for all purposes.

* From the Loomis Sanatorium, Babbitt Memorial Laboratory.
1. Greenfield, J. G., and Anderson, I.: Lancet 2:423 (Sept. 6) 1919.

Therapeutics

A DEPARTMENT DEVOTED TO THE IMPROVEMENT OF THERAPY. A FORUM FOR THE DISCUSSION OF THE USE OF DRUGS AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

USE AND ABUSE OF CATHARTICS *

(*Concluded from page 461*)

RHUBARB

Rhubarb [1] might be called the "constipating purge"; it presents a remarkable combination of constipating and purgative action, since it contains tannic acid and a resinous body, which, on hydrolysis, yields various purgative anthraquinon derivatives (rhein, emodin, chrysophanic acid, etc.). The latter may also exist partly free. In addition, this drug contains a large amount of calcium oxalate, which accounts for its "grittiness" when chewed.

MODE OF ACTION AND INDICATIONS

With small doses (up to 0.3 gm., or 5 grains), the astringent action predominates; with gram doses (15 grains or more) the purgative action is brought out, a mushy evacuation resulting in from six to ten hours, followed by a greater tendency to constipation than is the case with most other purgatives. When used in sufficiently large doses to be a reliable cathartic, rhubarb is a distinct irritant to the intestine; hence it is contraindicated in such conditions as enteritis or mucous colitis.

Authorities differ regarding the use of rhubarb in chronic constipation. Some consider it especially indicated in this condition, because—as is the case with other anthraquinon cathartics (cascara sagrada, senna, aloes)—habituation does not readily occur. Others, and with greater cogency of reason, condemn rhubarb as one of the worst of all cathartics in chronic constipation, because of its tendency to leave constipation as an after-effect. We may safely conclude that chronic rhubarb purgation is a misuse of the drug. It surely cannot cure chronic constipation; and it might make it worse.

Rhubarb is claimed to be especially indicated in those cases of delicately poised enteric function, occasionally found in feeble women and children, characterized by a tendency to diarrhea following the use of any other purgative. Rhubarb knows when to "stop." The introduction of such nonirritating physical laxatives as liquid petrolatum and agar, which cannot cause excessive action, has rendered rhubarb much less important in such cases.

The chief use of rhubarb is in the milder diarrheal disturbances, especially of infants and children. On the other hand, in the severer diarrheal disorders, when there is actual inflammation of the intestine, rhubarb would be contraindicated because of the possibility of its acting as an irritant. When the intestinal tract contains curds or other unsuitable or indigestible food, which produces colic and diarrhea in the course of "nature's" efforts at evacuation of the irritant, rhubarb is a remedy *par excellence* to reinforce the salutary tendency to evacuation, and to antagonize, by its astringent action, an excessive prolongation of the diarrheal discharges. For this purpose the *aromatic syrup of rhubarb* is usually administered, and with good reason. Here is a pharmaceutic masterpiece in efficiency of drug disguising. Children delight in taking it. It is so weak a preparation—representing only 3 per cent. of the drug—that it can be given in teaspoonful doses even to infants. For adults it is too feeble in action. The following is Kerley's [2] schedule of dosage:

DOSAGE OF AROMATIC SYRUP OF RHUBARB

6 months	4 c.c. (3 i)
18 months	8 c.c. (3 ii)
3 years	12 c.c. (3 iii)
5 years	16 c.c. (3 iv)

For children, this is the rhubarb preparation to be preferred to all others, unless the sugar contained in it should render it objectionable, as in excessive intestinal fermentation. In such cases, an equivalent amount of the aromatic tincture of rhubarb, of which the syrup contains 15 per cent., might be substituted; and benzosulphinid (saccharin) used for sweetening, as in this prescription:

	Gm. or C.c.
℞ Benzosulphinid	0|03
Sodium carbonate	0|03
Aromatic tincture of rhubarb	4|50
Water ..... to make	30|00

Dosage same as that of the syrup.

This drug has the reputation of being "good for the stomach." It would no doubt be as difficult to bring objective proof for this action as it is for that of other so-called stomachics. Its not unpleasant bitter, aromatic taste and its astringent effect would entitle it to rank among the astringent bitters were it not for its purgative properties. This combination of qualities possessed by it renders rhubarb superior to other astringent bitters in some cases of dyspepsia complicated with constipation. For this purpose, owing to the stomachic qualities of the alcohol contained in them, one of the tinctures, the tincture of rhubarb (20 per cent., spiced with cardamom) or the more pleasant aromatic tincture (also 20 per cent., flavored with cinnamon, clove and nutmeg) would be employed in teaspoonful doses—more or less, according to the effect on the bowels—taken in a little water half an hour before meals. This treatment is, of course, suitable only in "atonic" conditions, and would be contraindicated by a state of excessive irritation or irritability.

SIDE EFFECTS

As the rhubarb stools have a "bilious" appearance due to the presence of the coloring matters of rhubarb, it was formerly classified as a cholagogue, and special indications were constructed for it based on this supposed action on the liver. We now know that it is not a real cholagogue, and that whatever benefits are obtained from its use in liver disturbances are due to its cathartic action. It must be remembered that, owing to the chrysophanic acid it contains, rhubarb imparts to the urine a yellowish color, which may lead one to suspect the presence of icterus. This urine may be distinguished from that of jaundice by the fact that it becomes purplish red on the addition of an alkali. Rhubarb renders the milk of nursing women laxative to the child. The drug has been known to cause macular, vesicular and even hemorrhagic eruptions, though such effects are rare.

* This article, the nineteenth, concludes the series on the "Use and Abuse of Cathartics." These articles, with revision and additions, will shortly be published in book form.

1. Rhubarb is the rhizome of an Asiatic plant, related to but by no means identical with the "rhubarb" or "pie-plant," the juicy stems of which we use in cookery. Eating of these has, therefore, merely the laxative value of cellulose food, and will, of course, not give one the purgative action of the official rhizome.

2. Kerley, C. G.: The Treatment of the Diseases of Children, Philadelphia, W. B. Saunders Company.

METHOD OF ADMINISTRATION

For solid administration forms, powdered rhubarb is to be used. The *extract of rhubarb* is undesirable, as it is unreliable in action. The active principles are so easily injured by heat that the extract may even be less efficient than the powdered root.[3] Soap forms a good excipient for rhubarb pills. This prescription might serve as example:

	Gm. or C.c.	
℞ Rhubarb, powdered	6 0	gr. xc
Soap, powdered	2 0	gr. xxx
Water.....enough to make a mass		

Mix and divide into 30 pills.
Label: One or two after each meal.

Each of these pills contains only 0.20 gm. (3 grains) of rhubarb; and more than 0.30 (5 grains) could hardly be given in pill form, on account of the necessary limitation in the size of pills. Hence, when larger doses are required, the powder form must be employed, though the powder might be disguised by enclosing it in cachets, each of which may be made to contain up to 0.60 gm. (10 grains) of the powder. Some persons actually enjoy chewing rhubarb; and little cubes of the rhizome are on the market, especially suitable for this purpose.

RHUBARB AND ALKALI

The addition of alkali prevents precipitation when an alcoholic preparation of rhubarb is mixed with water. This is the reason for the presence of a small amount of potassium carbonate in the syrup of rhubarb. There are numerous other compound rhubarb preparations, however, in which alkali is used for synergistic or for cooperative action.

Compound rhubarb powder, also known as Gregory's powder, is a mixture of:

Powdered rhubarb	25 gm.
Magnesium oxid	65 gm.
Jamaica ginger	10 gm.

We have here the evacuant action of the rhubarb, which acts chiefly as stimulant to peristalsis, reinforced by the laxative action of the magnesium ion, which acts by retaining fluid in the bowel. In addition to this, the antacid action of the magnesium oxid is of value in excessive intestinal acidity, which is frequently present in the summer diarrheas of infants and children. The dose of this powder for an adult would be from 2 to 4 gm. (one-half to 1 dram); for a child 2 or 3 years old, from 0.3 to 0.6 gm. (5 to 10 grains). This powder is, however, far from being palatable. Adults will take it, but children only with protest and often only after a struggle. In this connection, two axioms on children's medication might be laid down:

1. A struggle in administration sometimes does more harm than the medicine can do good.
2. The more we know about medicines, the less offensive is our medication.

That it is not necessary to inflict Gregory's powder on the sensitive palate of a child is shown by a prescription that offers all the effects obtained from the powder in an actually delicious form:

	Gm. or C.c.
℞ Magnesia magma	30
Aromatic syrup of rhubarb	30

M. Label: Teaspoonful every two hours.

The proportion of the ingredients, size of dose, and frequency of repetition of dose may, of course, be varied to suit the individual case. The previously described saccharinated substitute might be used instead of the syrup in cases in which sugar would be contraindicated.

"Rhubarb and soda" is quite a popular stomachic remedy, and deservedly so. It is a veritable gastric polychrest, combining the previously detailed effects of rhubarb in dyspepsia with those of baking soda, which is probably the single most efficient temporary remedy against gastric distress. Rhubarb and soda tablets are marketed by various manufacturers. They are the most convenient form for administration of this remedy to the average dyspeptic. This prescription might be useful:

	Gm. or C.c.	
℞ Powdered rhubarb	10	ʒ iiss
Sodium bicarbonate	30	ʒ i
Oil sugar of peppermint (N. F.)	30	ʒ i

Mix and divide into 30 powders.
Label: One, in hot water, after meals as required.

The oil sugar might be omitted for those who dislike sweet, or for patients with whom sugar disagrees. The 0.60 c.c. of oil of peppermint contained in the oil sugar (2 per cent. according to a general formula in the National Formulary) might be incorporated with the other drugs. For patients who dislike the flavor of peppermint—and there are such—oil of fennel, oil of anise, or any other volatile oil desired might be substituted. Instead of being divided into doses, the powder might be dispensed in a box and the patient directed to take a level or a heaping teaspoonful, as required. This preparation is therapeutically as efficient as, and pharmaceutically much superior to, the old and now no longer official *mixture of rhubarb and soda,* at present embalmed in the National Formulary under the title of *"Compound Rhubarb Mixture."* The manner in which the extemporaneous preparation may be modified, as indicated above, to suit the needs and idiosyncrasies of the patient proves the undesirability, so often noted in other instances, of ordering a ready made "hand-me-down" mixture.

3. For the same reason the use of the fluidextract of rhubarb is very limited.

TREATMENT OF LARVA MIGRANS, OR CREEPING ERUPTION

DR. R. R. KIME, Lakeland, Fla., writes: In Queries and Minor Notes (THE JOURNAL, March 8, 1919, p. 748) there was a short discussion on the treatment of larva migrans, or creeping eruption. Most of the methods of treatment presented are painful and uncertain in results. I would suggest a simple, efficient, quick, easily applied remedy, consisting of salicylic acid, 10 grains, for young children, or salicylic acid, 20 grains, to collodion, 1 ounce, for older children. If this is painted well over the eruption, especially at the points of migration, twice daily, the eruption will soon disappear. The collodion obstructs migration and the salicylic acid destroys the larva.

Faræus' Sedimentation Test for Pregnancy.—Faræus noticed that the blood of a pregnant woman allows more sedimentation of erythrocytes than the blood of the non-pregnant. He uses a tube 0.01 cm. in diameter, and mixes in it 8 c.c. of blood with 2 c.c. of a 2 per cent. solution of sodium citrate, and sets it aside for an hour. If the sediment of the corpuscles then reaches only to a height of 1 cm. or less, the woman is not pregnant as, with blood from a pregnant woman, the sediment was always found extending above the 1 cm. mark. Hauch stated at the recent French Gynecologic Congress at Brussels that this test is being used considerably in the Scandinavian countries, and that negative findings could be relied on, but that positive findings were noted sometimes in certain diseases as well as in the pregnant.

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SATURDAY, FEBRUARY 21, 1920

AMERICAN FOOD HABITS AND HEALTH

Changes in the food habits of large groups of persons may be brought about by necessity and likewise by altering customs and food preferences. Conditions determined by the war and consequences arising from it have enforced pronounced changes in the dietaries of thousands. What the outcome of this necessary response to the exigency of food situations may be is now being exemplified in the effect of the innovations on the health of the affected nations. Scurvy, beriberi and war edema are conspicuous illustrations of the extreme effects brought about by necessity, that is, by actual shortage of certain foods or by their high cost. A few months of deprivation may suffice to send deficiency diseases broadcast among people previously living in good health and working efficiency.

The other category of change in food habits by which new dietary customs come into vogue and older choices lose their popularity is slower in becoming manifested. The more permanent revisions of food preferences are not ordinarily created by famine, war or pestilence. They develop slowly, like other changes in styles; nevertheless they do arise, despite the fact that many persons assume that our food practices are perennially the same. Recently the Office of Home Economics in the United States Department of Agriculture[1] completed a comparison of the foodstuffs purchased by 500 families with the amounts of the same foods purchased by 400 families about twenty years ago. The outcome shows that the amount of meat in the diet has decreased about 8 per cent., and grain products about 11 per cent., while dairy products have increased about 6 per cent.; vegetables, 4 per cent., and fruits, 8 per cent. The average amount of meat and fish supplied in the diet in the 500 studies was about 6 ounces daily per man: dairy products, 16 ounces; grain products, 13 ounces; vegetables, 16; fruits, 9; sugar and syrups, 3, and fats, 2 ounces.

The statistics indicate, so far as such broad generalizations which deal with the quantity of nutrients rather than the special qualities of the foods can be depended on, that the "average" diet of such groups is adequate. The use of milk increased up to 14 ounces a day in the period under consideration. This is scarcely more than one-third quart a day; and since the amount of milk did not increase in accordance with the greater number of children in the families studied, the undervalued importance of milk in the dietary still deserves to be emphasized to the American public. Few of the dietaries were seriously below the accepted standards for the more important mineral ingredients required, namely, iron, calcium and phosphorus. The average dietary is more likely to be deficient in iron than in the other elements mentioned. The data indicate that milk and other dairy products supply the greatest percentage of calcium; vegetables and grain products, the greatest percentage of iron; and dairy and grain products, the greatest amount of phosphorus, and in each case at the lowest cost.

1. Langworthy, C. F.: Office of Home Economics: Some Results of the Work Carried on During the Fiscal Year 1918-1919, J. Home Economics **11**: 519 (Dec.) 1919.

THE CONSEQUENCES OF BURNS

The pathogenesis of the severe symptoms, often ending in death, which may follow burns has long been a matter of speculation. The widely unlike character of the phenomena involved makes it more than probable that differences in the degree of injury are attended by a variety of untoward consequences not necessarily dependent on a common cause. Thus, in burns of the first and second degree there is little, if any, actual destruction or disintegration of the tissues, the reaction being more nearly of a severe inflammatory character. On the other hand, in the severe damage of burns of the third degree, when subcutaneous cellular tissues are actually destroyed, unusual chemical products may be generated, and their possible deportment in the organism must be taken into account. It is easy to understand how local symptoms arise in the case of burns; but the nature of the less frequent but more aggravated general phenomena, with their remote effects, has been more puzzling.

An unusually large number of observations on a group of persons more or less severely burned in a munition factory near Frankfort[1] has afforded an opportunity to test, on a considerable scale, the validity of some of the theories that have been advanced to explain the consequences of burns. The theory of Sonnenburg,[2] which attributed death to a reflex depression of the vasomotor tonus, failed to receive support from these clinical cases. Vasomotor shock was not a common manifestation. Marked changes in the blood, reported by a number of observers, have been emphasized as factors of primary significance. Alterations in the form of the red corpuscles with hemoglobinuria,

1. Becky, K., and Schmitz, E.: Klinische und chemische Beiträge zur Pathologie der Verbrennung, Mitt. a. d. Grenzgeb. d. Med. u. Chir. **31**: 416, 1919.

2. Sonnenburg: Die Ursachen des Todes nach ausgedehnten Verbrennungen, Deutsch. Ztschr. f. Chir. **9**: 138, 1877; Virchows Arch. f. path. Anat. **80**: 381, 1881.

and particularly a loss of water from the blood accompanied by an increase in the number of erythrocytes amounting sometimes to 4,000,000 per cubic millimeter, are on record. In the Frankfort victims hemoglobinuria, which is often regarded as an almost specific symptom of severe superficial burns, was by no means always present. The formed elements of the blood were considerably altered in several instances, but the most striking finding was the enormous increase in the number of leukocytes, which reached 50,000 per cubic millimeter in one case. Whatever the significance of such changes in the blood picture may be, they cannot be regarded by themselves as of sufficient moment to account for the severity of the symptoms exhibited by badly burned patients. In any event it is unlikely, to say the least, that the altered red corpuscles so often observed after burns could produce by thrombosis or embolism those lesions which have been observed at necropsy.

The most probable hypothesis of the pathogenesis of burns still remains unchallenged. It looks on the clinical manifestations, such as delirium, hemoglobinuria and albuminuria, as well as on the anatomic findings, as the outcome of a profound intoxication.[3] However obscure the nature of the hypothetic poison still is, there are many hints that it may be allied to those products which are concerned in so-called anaphylactic shock. One thinks, first of all, of protein derivatives that might arise through the destruction of the tissues at the site of injury. It is no longer a new conception to assume that the organism may be sensitized by chemical compounds arising through abnormal reactions in its own tissues. Vogt[3] has summarized this view in suggesting that death following immediately on a burn may be due to shock, while delayed death is the outcome of an intoxication. The poison is generated in the area of tissue destruction, and by its continued absorption and distribution leads to a sensitization of the body which, in turn, permits subsequent death by anaphylaxis.

Corresponding with the views just formulated, the detection of foreign toxic products in the urine has been reported after severe burns as well as following anaphylactic seizures. Becky and Schmitz [1] assert the presence of a protein of unidentified character in the urine of the Frankfort patients, and they confirm the previous reports concerning the enhanced toxicity of the urine for mice. Bearing in mind the fiasco of earlier studies on "urotoxic coefficients," and the unfortunate confusion which they caused in discussions on "autointoxication," we may well hesitate to embody such evidence in any theory of intoxication after burns. The essential features of the possible production of poisons in burns are by no means invalidated, even if the current evidence is not yet conclusive. From the standpoint of treatment it cannot be too strongly emphasized that something far more serious and threatening than the mere disintegration of localized areas of tissue must be taken into account. A profound systemic intoxication may be involved.

3. Bardeen, C. W.: Johns Hopkins Hosp. Rep. **7**: 137, 1898. Eyff: Centralbl. f. d. Grenzgeb. d. Med. u. Chir. **4**: 428, 1901. Pfeiffer: Virchows Arch. f. path. Anat. **180**: 367, 1905. And particularly Vogt: Ztschr. f. exper. Path. u. Pharmakol. **11**: 191, 1912.

"UP FROM INSANITY"

Newspaper medicine contributes much to the gaiety and insouciance of medical life, as may be seen by the frequent quotations from the lay press in our Tonics and Sedatives. There is some excuse for the ephemeral dailies whose reporters can hardly be expected to be familiar with the elaborate technical terms of medicine; it would be impossible to employ a medical censor to examine the hourly output of world news. It amuses us if the reporter discusses the interstitial glands, ascribes *Taenia solium* to its proper place in brain anatomy, credits some surgeon with the clever removal of the Ethiopian tubes, and eyes us as he writes with a scarcely perceptible movement of the alligator supercilii. But it is a matter of concern when a dignified monthly periodical, with weeks and often months for consideration of its manuscripts, gives publicity to medical material which is unproved, misleading, untrue or sensational. It should not be difficult to have any medical essay scrutinized by expert physicians before publication.

The November issue of the *Atlantic Monthly* contained an article entitled "Up from Insanity" by E. J., purporting to be the experiences of one who had been insane and had recovered. The editor of the *Atlantic* is at pains to say of the author that "his life has been precisely as described in his revealing narrative. He could not be so frank and sign his name; but that name is known to the editor. The paper has been the subject of much correspondence, and with the author's consent pains has been taken to verify many of the facts. The *Atlantic* has entire confidence that the story is genuine down to the smallest detail." The editor thus claims to have taken pains to verify many of the facts, and says that the story is genuine down to the smallest detail. But there is one fact, one small detail, that the editor has not authenticated; that is, as to whether the writer of the article has ever suffered from insanity. It is, of course, a small detail, but it should not have been overlooked.

There is no evidence in the article itself that "E. J." ever did suffer from insanity; and since the editor offers us no proof of the fact, it would seem that a very essential element in the story is lacking. On the other hand, there is in the article considerable evidence that the writer was not insane. After a harrowing description of an episode intended to be the real "thriller" of this sensational paper, the writer (on his way to hunt big game in Africa) consulted a "celebrated New York specialist" who told him he had only *six*

months to live, and his advice "was to go out and hunt and roam the world and make the best of the passing hours." As there is no curable form of insanity in which sudden taking off could be predicted, and as any celebrated specialist would have been a little more politic in his prognosis to an insane man, and under such circumstances would have advised a sanatorium for the remainder of his brief career, we are inclined to believe that the specialist did not discover insanity in the patient. But he seems to have made a wrong prognosis, and Time took its revenge. The writer went on the suggested hunting trip to Africa, and on his return he learned that just *six months* after he had left the United States *"that great physician had died—insane."*

We shall have to be brief with the "thriller" just alluded to: One cold, raw March day, while traveling from village to village in a buggy, as a salesman, apparently, he entered a country store and found as he crossed the threshold that a great change had come over him. He leaned against the counter to keep from falling, was unable to speak, and "grinned diabolically" in attempting to talk to the merchant. The merchant in a kindly and fatherly way helped him back into his buggy, and he drove seven miles in a torrential downpour to a village inn. The host helped him out, and as he supported him into the house winked at his pals around the stove. The patient grinned "like a Cheshire cat," had lost his power of locomotion, stared at the pals who burst out laughing in his face, finally got to his room, fell across the bed fully dressed and went to sleep, with a vicelike frontal headache. Sometime in the night he awoke, lighted a lamp, looked at himself in the mirror (he describes the "horrible caricature" with reportorial frills) and then became intensely nauseated and violently ill! After closing this description he exclaims: "That, my friends, is insanity, the ultimate curse of God." On the contrary, the description does not fit insanity at all, but is a clinical picture of a condition very familiar to physicians and to laymen in times past—before the days of prohibition. The inn-keeper and his friends around the stove evidently—from the text—made a diagnosis at the time. They laughed. Their diagnosis may have been wrong. It may be that it was a hysterical nervous condition from fatigue and exposure simulating closely intoxication; but the description does not fit insanity.

The picture of himself as drawn by the writer in the article is that of a man now about 42 years of age, who had been at various times a salesman, a wanderer and a reporter. He was a poor mixer, odd, eccentric, shy, morbidly self-conscious so that at one time he wore blue glasses because of this, and given to introspection. In other words, he describes the usual course of an ordinary case—a neurotic individual with a tendency to hypochondriacal self-analysis, self-pity and gross exaggeration of his symptoms.

There is plenty of really good literature written by the insane, either after recovery or during the progress of the disease, and some of it has been of distinct benefit to humanity; for instance, "The Mind that Found Itself," by Clifford Beers—a book that led to the foundation of useful societies of mental hygiene in this country and Canada, and has furthered the welfare of the insane everywhere. Then there is the "Autobiography of a Paranoiac," extracts from which were published years ago in the *Journal of Psychology*, a truly extraordinary self-analysis, written in most excellent style, and a real contribution to psychology. "Up from Insanity" is misleading and sensational, carries no conviction, does no good, and the *Atlantic Monthly* is the last periodical in which one would expect to see such an article.

BOTULISM FROM RIPE OLIVES

For the fourth time within a few months a highly fatal outbreak of botulism due to ripe olives is recorded in our columns. The article on an outbreak of botulism in New York in THE JOURNAL [1] this week follows close on the heels of the report of the Memphis outbreak in our "General News" of last week. These added to the outbreaks at Canton, Ohio, and Detroit make a formidable showing.

Three of the four outbreaks appear to have been traced to one brand of olives, packed in southern California, a fact that we believe should be given wide publicity at this time, even if commercial interests suffer. It seems at all events as if all local health authorities should make systematic attempts to find out whether this particular brand of olives is being distributed within their jurisdiction. It is only the part of prudence and good common sense to make sure so far as possible that olives of this brand are not being "salvaged" and perhaps distributed to scores of small groceries and delicatessen shops throughout the country.

Two particularly disturbing features characterize these later outbreaks, one being that the olives apparently responsible for the New York outbreak were not of the same brand as those causing botulism in Canton, Detroit and Memphis. If it is true that more than one brand of olives is involved in the causation of botulism, the difficulties that public health authorities will have in coping with this menace are measurably increased. It is evident also that the whole ripe olive industry should be subjected to investigation and supervision. Steps in this direction have already been taken, as is also noted in our news columns. Thus far green olives do not seem to have been implicated in the causation of botulism.

The second point about which concern may well be felt is the seeming willingness of unscrupulous dealers

1. Sisco, D. E.: An Outbreak of Botulism, this issue, p. 516.

to sell olives and perhaps other foodstuffs that have been condemned. We are informed that the olives causing death in Memphis were obtained from a store of which the principal business is buying and selling salvaged merchandise. In this case, olives found in a dish on the table at the house where they were served had a very objectionable and pronounced foul odor. In the New York outbreak, a distributing company in New York City refused to put the olives on the market under their label, but the jars were resold by the California olive company that packed them and were shifted about from place to place for some months, many being rejected during their circulation because they were obviously spoiled and unfit for sale. From the information available it does not seem clear that the olives that were eaten in New York had a definitely spoiled odor. The only evidence from those eating the olives came from one victim shortly before death, who stated that he noticed nothing wrong about the odor or taste, and from one 9 year old child, who also noticed nothing disagreeable in taste or odor. Although a half bottle of ripe olives, probably the one that contained the toxin, was found in the home of the victims, no statement is made about the physical condition of these olives.

It seems clear that immediate and drastic warning should be given to dealers regarding the sale of ripe olives showing any signs of spoiling. It is also true that at least until fuller information is available salvaged food, particularly olives, should be regarded with considerable suspicion by the general public.

Current Comment

A PECULIAR SYNDROME ASSOCIATED WITH ADENOMA OF THE HYPOPHYSIS

Hitherto there have been two clear-cut clinical pictures associated with disease of the hypophysis: acromegaly, first accurately described by the French clinician Pierre Marie, and the syndrome described many years later by Fröhlich as dystrophia adiposogenitalis. It has generally been assumed that acromegaly is an indication of hyperpituitarism, while Fröhlich's syndrome is a manifestation of hypopituitarism. The work of American observers, and particularly of Harvey Cushing, has thrown a good deal of light on the subject of disorders of the hypophysis, and has indicated that in addition to these classical pictures certain atypical manifestations may at times be associated with disease of this gland. Reichmann[1] has recently recorded two examples of a third fairly clear-cut syndrome associated with disease of the hypophysis and easily distinguishable from either acromegaly or Fröhlich's syndrome. The prominent clinical features presented by his patients were turgidity and cyanosis of the face, with exophthalmos and dilated pupils; cardiac hypertrophy, with hypertension and bradycardia; glycosuria, premature menopause, pronounced myasthenia, edema of the legs, and a blood picture showing a decrease in the lymphocytes. In the patient who came to necropsy, the lesion was a chromaphil adenoma of the anterior part of the hypophysis, such as has been described by Benda as characteristic of acromegaly. The necropsy disclosed in addition a small thyroid rich in colloid material, and a slight but definite hyperplasia of the suprarenals. There was also osteoporosis in the bones of the vertebral column, and the patient had noted that her stature was gradually decreasing. It is apparent from the pathologic findings in this case that, while the main lesion was in the hypophysis, there was evidence that other glands of internal secretion were involved. The thyroid was smaller than normal, and the suprarenals were somewhat hyperplastic. Indeed, Reichmann had concluded during the patient's life that the syndrome was probably a polyglandular one. Reichmann is of the opinion that the clinical picture presented by these patients is not exceedingly uncommon. It will, of course, require further reports to determine whether this is the case. History has usually shown that the description of a new syndrome is followed by its recognition in various parts of the world, and there is little doubt that other reports on this peculiar condition will appear in the literature if Reichmann's assumption is correct. Since our knowledge of the glands of internal secretion is still very fragmentary, observations of this sort are stimulating both to the clinician and to the laboratory worker.

1. Reichmann: Deutsch. Arch. f. klin. Med. **130**:133, 1919.

THE PIGMENTS FOUND IN NERVE TISSUES

The existence of lipochromes—fat-holding or fat-combining pigments—in various parts of the body has long been recognized. The yellow color characteristic of the corpora lutea belongs to the group here referred to. Only in recent years has the chemical nature of some of the lipochromes been more clearly understood. The pigments of milk fats and body fats, of egg-yolk, of blood serum, of the corpus luteum and of other tissues have been identified as belonging to two classes of coloring matter, the carotin and xanthophyll pigments, respectively. We are indebted especially to the work of Palmer and his associates[1] in this country that these carotinoid pigments are now known to represent in many, if not in all cases, merely the lipochromes of plants transferred in the form of animal or human food and incorporated into the animal tissues. Histologists are familiar with a pigment that accumulates in the nerve cells in advancing life and sometimes under pathologic conditions. Of its origin and nature little has been known definitely. Because the pigment has been observed in certain wasting processes, some pathologists have looked on it as originating in the cells through their "wear and tear." As nothing more specific than staining methods has been depended on to determine the identity of the so-called cell lipochromes in most cases, it is by no means certain that the same products have been encountered in every instance.

1. Palmer, L. S., and Eckles, C. H.: J. Biol. Chem. **17**: 191 (March) 1914; **23**: 261 (Nov.) 1915; **27**: 27 (Oct.) 1916.

For one case, that of the lipochrome pigment of the nerve cell, however, the researches of Dolley and Guthrie[2] at the University of Missouri appear to have given a satisfactory answer. They demonstrate that it is a plant carotinoid pigment, derived from the food and incorporated in the cell, but limited to such species as carry carotinoids in the blood serum. Thus, in bovines, the occurrence of lipochrome in nerve cells appears to be customary; in swine, it is absent. Man, who is best known to exhibit lipochrome, is also known to carry carotinoids in his blood serum and to have colored fat. Some investigators have attempted to distinguish a group of pathologic pigments from the true lipochromes by calling them "lipofuscins."[3] Dolley and Guthrie[2] have been able to make pigment appear in or be absent from the nerve cells, according to the method of feeding they employed. When carotinoid-free diets were given, the lipochrome was missed from the nerve cells. They demonstrated that the reactions of the pigment that they could induce experimentally to deposit in the nerve cells was identical in its microchemical tests with the so-called "lipofuscin." The quite different melanin pigment that has been noted in nerve cells is, according to Dolley,[4] likewise not a natural constituent of any region of the nervous system, nor is it a product of normal or hypernormal functional activity. The genesis of the melanin pigment under all conditions, physiologic, morbid or senile, the Missouri investigators assert, is referable solely to depression. According to them, the histogenesis of the melanin pigment found in nerve cells is from nuclear material.

BRONCHIAL SPIROCHETOSIS

As long ago as 1905, Castellani, the student of tropical diseases, described the occurrence in the island of Ceylon of a form of bronchial infection caused by spirochetes. Since that time other observers have seen cases of bronchial spirochetosis in various parts of the world, but chiefly in the tropics. The American observers Jackson and Waters recognized the disease in the Philippines in 1908. The experiences of the recent war led to the observation that the disease was not confined to tropical countries. During the war, cases were observed in considerable number along the Adriatic coast, in Serbia, in Switzerland and in France. Recently Farah[5] described a number of cases of the disease in Egypt. The condition is one that is usually confused with tuberculosis. It generally runs a chronic course, although it may occur in the acute form. Patients usually complain of a chronic cough which is worst on arising and toward night and is accompanied by an expectoration that is frequently bloody. In the common form of the disease, the chronic type, the patient is usually afebrile, and no pronounced effect on the general health results. The recognition of the disease depends on the finding in the sputum of the characteristic spirochete, which was named by Castellani *Spirochaeta bronchialis*. The organism stains readily with the ordinary basic anilin dyes, but does not take Gram's stain. It generally occurs in the sputum in large numbers. Attention is called to the subject at the present time because of the return of large numbers of our citizens from service in France and other European seats of war where the disease might possibly have been contracted.

2. Dolley, D. H., and Guthrie, Frances V.: The Pigmentation of Nerve Cells, II, The Lipochrome a Plant Carotinoid Pigment, J. M. Research, **40**: 295 (Sept.) 1919.

3. Wells, H. G.: Chemical Pathology, 1918, p. 475.

4. Dolley, D. H.: The Recovery from Depression in the Purkinje Cell and the Decline to Senility of Depression: With the Incidental Histogenesis of Abnormal Pigmentation, J. Comp. Neurol. **28**: 465, 1917. Dolley, D. H., and Guthrie, F. V.: The Pigmentation of Nerve Cells, I, The Non-Fatty, Melanotic Pigment in the Dog and Rabbit Produced by Chronic Depression, J. M. Research, **39**: 123 (Sept.) 1918.

5. Farah, Najib: Presse méd. **27**: 774 (Dec. 17) 1919; abstr. J. A. M. A. **74**: 360 (Jan. 31) 1920.

THE ATTEMPTS TO TRANSPLANT TUMORS

It has been remarked that the cancer problem, like the kingdom of heaven, is within us. An ordinary infection can be transferred from one individual to another, and the disease may often even be conveyed between individuals of different species. This is in striking contrast to what is true of most neoplasms. They do not continue to develop when introduced into another than the original host. Hence, when it was found that one or more varieties of tumors having something in common morphologically with the malignant growths of man could be transferred from animal to animal, particularly in the case of mice, the hope of finding important facts in relation to the spread of such tumors was greatly encouraged. The story of transplantation experiments in cancer research is a history of many chapters. Spurred on by the striking analogies with human experience obtained in the investigation of tumor grafts in mice, as well as by the tremendous human importance of the questions at issue, numerous investigators have turned their best energies toward transplantation studies. Despite the oft repeated experience of "negative results," the workers have persisted in what has often seemed to be a hopeless undertaking. Nothing short of the courage of mind which is a characteristic of the true man of science could have kept cancer research alive to the degree that is represented by its place in present day medical inquiry. Yet in the midst of many disappointments and of the protracted uncertainties, some positive findings and helpful information have almost always been forthcoming. Each year has witnessed the patient unearthing of some new fact that has proved to be a spur to further initiative. As an illustration of this we may cite the recent attempts of Mann[1] in the Department of Experimental Surgery at the Mayo Clinic to obtain a transplantable tumor in the higher species of animals. Heretofore all such experiments, with the exception of those dealing with the infectious sarcoma of the dog, have been failures. Mann has made a new effort to transplant tumors of the dog and cat, for the advantage of obtaining a transplantable growth in a larger species is obvious. The results obtained in the Rochester experiments were strikingly similar to those hitherto observed in autotransplantation and homotransplantation of normal tissues. The transplants of a mammary carcinoma of a dog and of a fibroma of a cat failed to

1. Mann, F. C.: Attempts to Obtain a Transplantable Tumor in the Higher Species of Animals, J. Cancer Res. **4**: 331 (Oct.) 1919.

develop to any noteworthy extent on other individuals of the same species. The transplants of the fibroma which were made in the donor grew, however, and were exactly similar to the mother tumor in the cat. Mann has discovered the lesson in such experiences. The problem, he says, of developing a transplantable tumor in the higher species of animals is, it would seem, closely allied to the problem of making homotransplants of normal tissues grow. Here, again, is a fruitful field for renewed research.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Reciprocal Relations Established.—Reciprocal relations have been established between the state medical licensing boards of California and Iowa which became effective Jan. 22, 1920.

New Officers.—At the meeting of the West Side Medical Association of Kern County, held in Taft during the week of January 17, Dr. Harry N. Taylor, Maricopa, was elected president, and Dr. Allen, Taft, secretary.

Botulism Study.—A fund has been raised by the olive growers and the canning industry for an intensive study of botulism in California. The investigation will be conducted in the laboratories of the Stanford University Medical School and the George William Hooper Foundation for Medical Research of the University of California and has the cooperation of the U. S. Public Health Service and the California state board of health. A careful study will be made of the distribution of *Bacillus botulinus* in nature, of the ways in which food materials may become infected and of the steps necessary to destroy the organism when it has infected raw food materials. It is expected that the work will require at least two years.

FLORIDA

Personal.—Dr. Clarence M. Slack has been elected mayor of St. Petersburg.——Dr. John T. Bowen, Clearwater, who has been on duty with hospitals in Serbia during the world war, has received a decoration from the Serbian government.

Bequest to Health Bureau.—A citizen of Florida, who wishes to remain anonymous, has deposited with the state officer a will in which he leaves $75,000 to carry on the fight against venereal disease. The will provides that a corporation must be formed to administer the bequest, which constitutes the major portion of the testator's fortune.

County Society Program.—The committee on scientific work of the Hillsboro County Medical Society has issued the society's program for 1920 in the form of a calendar. The meeting days of the society are red letter days to the physicians of the county. At the bottom of the page for each month appears the scientific program for the society's bimonthly meetings.

ILLINOIS

Chicago

Grant by the Fenger Memorial Association.—The Fenger Memorial Association, at the suggestion of Dr. Ludvig Hektoen, has awarded Dr. Harry B. Culver a grant to aid in the study of certain urinary infections.

Dinner to Philadelphia Neurologist.—Dr. Charles H. Frazier, Philadelphia, was given a complimentary dinner at the University Club, February 18, at which he met former service men who had been members of his classes, and afterward read a paper before the Chicago Medical Society on major trigeminal neuralgias and their treatment.

Decrease in Influenza and Pneumonia.—From more than 2,000 there was a drop to 136 cases of influenza, February 14, and pneumonia cases dropped from a maximum of 300 to 56. Eighteen deaths were reported from influenza, and twenty-three from pneumonia. On account of the improvement in the influenza situation, the ban on visiting in hospitals has been removed, and public funerals are again permitted.

Augustana Hospital Drive.—A drive of the Augustana Hospital for $700,000 for the erection of a new building was opened, February 16, by the first of a series of ten dinners. Addresses were made by Chief Justice Harry Olson, chairman of the executive committee, Dr. William A. Evans, Mrs. C. A. Evald, and Mrs. Albert J. Ochsner. A budget was approved to apportion to the various divisions the following amounts: executive committee, $18,245; men's division, $22,911; women's division, $5,454; miscellaneous, $2,300.

Joint Meetings.—A joint meeting of the Chicago Pediatric Society and Clinic Society of the Children's Memorial Hospital was held at the hospital, February 20. Dr. John A. E. Eyster of Madison, Wis., delivered the address of the evening.——A joint meeting of the Chicago Medical Society and American Congress on Internal Medicine will be held February 25, at 8:40 p. m. Dr. A. Scott Warthin, chief of the department of pathology of the University of Michigan, Ann Arbor, will deliver an address on "The Medical Aspects of Gassing and Warfare with Particular Reference to Mustard Gas," illustrated by lantern slides.

INDIANA

Conference on Mental Hygiene.—At the Indiana Conference on Mental Hygiene held in Indianapolis, December 15, under the auspices of the Indiana Society for Mental Hygiene, President William Lowe Bryan of Indiana University, Bloomington, was elected president; Mr. Z. T. Fitzgibbon, Muncie, vice president; Mr. Paul Kirby, Indianapolis, secretary, and Mr. Edward Woollen, Indianapolis, treasurer. Medical members of the executive committee are Drs. S. E. Smith, Richmond, George S. Bliss, Fort Wayne, and Charles P. Emerson, Indianapolis.

Personal.—Dr. Columbus B. Goodwin, Kendallville, is reported to be seriously ill with pneumonia in Lakeside Hospital.——Dr. George S. Bliss, superintendent of the Indiana Home for Feeble-Minded Youth, Fort Wayne, has been appointed executive head of a similar institution operated by the United States government in Honolulu, Hawaii.——Henry C. Gemmill, director of the Fort Wayne municipal venereal clinic, has resigned to accept a position as executive officer of the seventh district of the U. S. Public Health Service with offices in Cincinnati.

LOUISIANA

Full-Time Health Work.—The Rapides Parish Police Jury has appropriated $15,000 to be supplemented by appropriations made by Alexandria for carrying out full-time health work.

No Bubonic Plague in New Orleans.—The U. S. Public Health Service announces there have been no new cases of human plague in New Orleans since December 29. During the two months preceding, there were in all twelve cases of human plague, all of them among those employed in the large food warehouses located near the water front. The situation was promptly and effectively met by the authorities, and New Orleans is declared to be just as safe today as any other city in the country. It is just as safe to visit New Orleans as it is to visit Rome, Paris or any other large city.

MASSACHUSETTS

Tuberculosis Association Established.—The representatives of organizations in northern Massachusetts which are interested in the control of tuberculosis met, February 4, in Salem and organized the Northeastern District Tuberculosis Association, electing Israel C. Clark, Haverhill, president; Mrs. Sturges, Salem, vice president; Mrs. George G. Winchester, Gloucester, secretary, and Josiah Gifford, Salem, treasurer.

Universal Military Training Bill.—Acting on the unanimous request of the council of the Massachusetts Medical Society, the joint committee on legislation of that society and of the Massachusetts Homeopathic Medical Society, February 10, considered and unanimously endorsed the medical aspects of the bill now before Congress providing for universal military training. It was the opinion of the committee, which represents over 4,000 physicians of Massachusetts, that the detection of diseases and defects through physical examination, their relief by appropriate measures,

and the betterment of health and physique through out of door life and exercise must inevitably improve greatly the physical condition of the young men throughout the country.

MICHIGAN

Society Reorganized.—Physicians of Barry County met at Hastings, December 31, and reorganized the Barry County Medical Society, electing the following officers: president, Dr. Clarence H. Barber, Hastings; vice president, Dr. Edgar T. Morris, Nashville; secretary, Dr. Arthur W. Woodburne, Hastings.

State Officers Reelected.—At the meeting of the trustees of the Michigan State Medical Society in Detroit, December 13, Dr. Frederick C. Warnshuis, Grand Rapids, was elected secretary and editor of the official organ. Dr. David Emmett Welsh, Grand Rapids, was reelected treasurer. It was decided that the annual meeting of the society be held in Kalamazoo, from May 25 to 27.

Personal.—Dr. Garfield Smalley, Charlotte, who has been in Central America for a number of years, is ill with tropical fever in the Charlotte Sanatorium.——Dr. Vern N. Richeson has succeeded Dr. Jeannette Brigham, resigned, as city health officer of Howell.——Dr. George K. Pratt, Flint, has been made assistant superintendent of the Oak Grove Hospital.——Dr. Lloyd C. Harvie, Saginaw, has been appointed city physician of Saginaw to succeed Dr. Leon B. Harris, deceased.——Dr. Lucius G. Fitzgerald, Port Huron, was acquitted by a jury, January 19, of the charge of performing an illegal operation.

MINNESOTA

Upper Mississippi Physicians Elect Officers.—At the annual meeting of the Upper Mississippi Medical Society held in Brainerd, January 8, the following officers were elected: president, Dr. J. A. Evert, Brainerd; vice president, Dr. F. L. Wilcox, Walker; secretary-treasurer, Dr. Irving Badeaux, Brainerd.

Overseas Medical Officers Club.—Minneapolis physicians, surgeons and dentists who served in the U. S. Army, Navy, Marine Corps or Public Health Service during the world war met, January 15, and organized a club, of which Dr. Frederick E. Haynes was elected president and Dr. Clifford E. Henry, secretary.

Deaths.—Elmer Ray Hoskins, Minneapolis; Ph.D., University of Minnesota, 1916; aged 30; Instructor in Anatomy, University and Bellevue Hospital Medical College, 1917-1918; Lieut., U. S. Sanitary Corps, 1918-1919; Associate Professor of Anatomy, University of Pittsburgh, and Assistant Professor of Anatomy, University of Minnesota, 1919; extensive contributor to the literature on the endocrine organs; died January 30, from influenza-pneumonia.——Walter W. Denny, a senior student of the University of Minnesota and an intern in St. Paul City Hospital, died January 26, from influenza.

MISSISSIPPI

Physician Sentenced.—Dr. Fletcher E. Lee, Aberdeen, is said to have been found guilty of manslaughter and sentenced to imprisonment for twenty years. Dr. Lee was charged with performing a criminal operation, as a result of which Miss Mary Miller of Aberdeen died.

Infirmary Purchased.—The locating commission of the Mississippi conference of the Methodist church has purchased the South Mississippi Infirmary, Hattiesburg, from Dr. Walter W. Crawford for $30,000. The present building will be moved and the infirmary will continue work until new buildings to cost $500,000 are ready for use.

NEW JERSEY

New Officers.—At the reorganization meeting of the Greenville Medical Society held in Jersey City, January 14, Dr. Samuel A. Cosgrove and Dr. Leonard B. Fauquier, both of Jersey City, were elected president and secretary-treasurer, respectively.——At the annual meeting of the Atlantic County Medical Society held in Atlantic City, January 9, Dr. Henry T. Harvey was reelected president, Dr. Walt P. Conaway, vice president, and Dr. Edward Z. Holt, secretary-treasurer; all are residents of Atlantic City.

Personal.—Dr. Marcus A. Curry, Greystone Park, has been appointed physician in chief and medical superintendent of the Morris Plains State Hospital pending the election of a permanent superintendent to succeed Dr. Britton D. Evans, deceased.——Dr. Philip Embury, Basking Ridge, recently sustained severe cuts and bruises when his automobile was struck and demolished by a train at a grade crossing on the Lackawanna Railroad.——Dr. Matthew K. Elmer, Bridgeton, has been elected a director of Cumberland National Bank.——Drs. David H. Oliver and Stacy M. Wilson, Bridgeton, have been elected directors of the Cumberland Trust Company.——Dr. William G. Schauffler, Lakewood, recently discharged as Colonel, Medical Corps, U. S. Army, resumed practice at Princeton, February 1.——Dr. Blase Cole, Newton, has been elected a director of the Merchants National Bank, Newton.——Dr. John R. C. Thompson, Bridgeton, has been reelected physician of Cumberland County.——Dr. Morris R. Faulkner, Vineland, sailed from New York for South America, January 15.

NEW YORK

New Officers.—At the annual meeting of the Medical Association of Oneida County held in Utica, January 13, the following officers were elected: president, Dr. Wood Clark; vice president, Dr. John D. Jones; secretary, Dr. Daniel E. Pugh, and treasurer, Dr. Robert Sloan, all of Utica.

Welfare Legislative Program.—Social welfare and labor legislative programs were discussed at a hearing before the senate labor committee February 12. These measures include the Knight bill extending the workmen's compensation law to cover occupational diseases, a health insurance measure, and a bill regulating the working hours of women and children.

Board of Inebriety Quits.—Assemblyman Martin McCue reported to the Assembly at Albany that the New York City board of inebriety, organized in 1910 to care for persons addicted to overindulgence in intoxicants, has found no one in need of its aid and has asked to be disbanded. A bill was introduced to delegate its powers to the board of correction.

Personal.—Count Pierre de Nouy, who was here during the war working for the French Mission, arrived on the *Rochambeau*, February 11, to take charge of the new laboratories of the Rockefeller Institute in connection with Dr. Alexis Carrel's research work.——Dr. St. Clair Darden, Poughkeepsie, has been appointed superintendent of the Healthwin Hospital and has assumed the duties of his position.

New York City

Personal.—Dr. Seymour Oppenheimer has been appointed a trustee of the state institute for the study of malignant disease.——Dr. Philip F. Bernstein, Brooklyn, has been appointed diagnostician to the Brooklyn section by the New York department of health.

Sanitary Code Affecting Milk.—At a recent meeting of the board of health, section 155 of the sanitary code of the department of health was amended and the term "modified milk" was defined. Under the terms of the amendment "modified milk" means any subdivision of the classification known as "Grade A for infants and children" which has been changed by the addition of water, sugar of milk or other substance intended to render the milk suitable for infant feeding. Such milk cannot be sold without a permit from the department of health.

NORTH CAROLINA

School Clinic.—Buncombe County Medical Society has established a permanent clinic at Asheville for the treatment of schoolchildren suffering from adenoids and diseased tonsils. Arrangements have been made for operations at the Mission, Meriwether and Biltmore hospitals, the physicians donating their services, but the hospitals making graduated charges not exceeding $12.50. The clinic will not be limited to Buncombe County, but will be open to those in western North Carolina.

Personal.—Dr. Andrew J. Warren, Raleigh, assistant state health officer, has been appointed health officer of Charlotte, succeeding Dr. C. Curtis Hudson, Charlotte, who resigned to accept a similar position in Richmond, Va.——Dr. James C. Braswell, Whitakers, was elected grand master of North Carolina masons at the meeting of the grand lodge at Raleigh.——Dr. Walter A. Newman, Wilmington, physician of New Hanover County, has been appointed field health director for Halifax County, Va.

Sanatorium Burns.—The Royal League Sanatorium, Black Mountain, with all its cottages, was destroyed by a fire originating in the power house on the night of February 15. Dr.

Isaac J. Archer, the superintendent, and the nurses and staff removed the patients without casualty to Cragmont Sanatorium, nearby. The loss is estimated at $30,000, partially covered by insurance. This sanatorium was the first to be established by a life insurance or fraternal insurance organization for the care of its members suffering from tuberculosis.

OHIO

Starts for Prison.—Dr. William A. Charter, Marion, sentenced several weeks ago to imprisonment in the penitentiary for from one to seven years for performing an illegal operation, was taken to the penitentiary, January 21.

Peak of Influenza Epidemic.—The larger cities of the state have passed the peak of the influenza epidemic, and the mortality is presumably at its height, but it is likely that the incidence of the disease will yet be greater in smaller towns and rural districts.

Hamilton S. Biggar Prizes.—The Cleveland Medical Library Association announces a prize essay competition for two prizes, one of $200 and one of $100, to be designated the Hamilton S. Biggar Prizes of the Cleveland Medical Library Association. Competition is open to members of the medical profession of Cuyahoga County, senior students in Western Reserve University and interns in hospitals in Cuyahoga County. The prizes will be awarded for the best essays on some clinical or theoretical subjects of immediate clinical interest. Manuscripts must be submitted to the secretary of the association, Dr. George Edward Follansbee, on or before Oct. 1, 1920, the identity of the author being safeguarded in the usual way. The announcement of the winners of the prizes will be made at the annual meeting of the association in December.

Personal.—Dr. James W. Young, Bellefontaine, has been appointed coroner of Logan County, succeeding Dr. Horace A. Skidmore, resigned.——Dr. David E. Stephen, Lorain, was seriously injured in a collision between his automobile and an interurban car, January 14.——Dr. LeRoy Pence was elected president of the Mechanics Building and Loan Association, Lima, at its annual meeting, January 20.——Dr. Jonas E. King, Girard, has been appointed health commissioner of Trumbull County.——Dr. James J. Martin, Bucyrus, has been elected city health commissioner.——Dr. James P. Wortman, Crooksville, suffered a fracture of the leg in an automobile accident, January 20.——Dr. Robert C. Rind has been elected president of the Springfield City Hospital staff. Dr. Clarence S. Ramsey has been reelected vice president and Dr. William B. Quinn has been elected secretary.

PENNSYLVANIA

Academy Offers Use of Library.—The Pittsburgh Academy of Medicine announces that the use of its library is open to all members of the Allegheny Medical Society and that a resident librarian is on duty at the Academy building, 322 North Craig Street, from 10:30 a. m. to 2:30 p. m., daily.

New Officers.—Mercer County Medical Society held its meeting January 4 at Buhl Hospital, Sharon, preceded by a clinic and luncheon. The following officers were elected: president, Dr. Frank Bleakney, Grove City; vice presidents, Drs. Augustus M. O'Brien, Sharon, and David Ferringer, Stoneboro; secretary, Dr. Martha Edith MacBride, Sharon, and treasurer, Dr. Carl J. Mehler, Sharon.

Licenses Revoked.—Federal attorney E. Lowry Humes was notified February 8 by Dr. John M. Baldy, Philadelphia, president of the Bureau of Medical Education and Licensure, that the bureau has revoked the license of Dr. Ellsworth J. Trader of Pittsburgh, now serving a sentence in the federal prison in Atlanta, Ga., for illegal writing of prescriptions for narcotics.——Six Pittsburgh physicians have been arrested by federal agents in the last few weeks.

Philadelphia

Campaign Against Quacks.—A city-wide campaign against quack doctors was announced February 10 by assistant district attorney Charles Edwin Fox, after William J. Locker, a practitioner of drugless therapy, pleaded guilty before Judge Rogers of practicing without a license.

Provost of University Resigns.—After forty-four years of service in college work, Provost Edgar Fahs Smith of the University of Pennsylvania has tendered his resignation to the board of trustees. He announced his complete retirement from all university activities and connections, giving up not only his office as provost which he has held since January, 1911, but also the Blanchard professorship of chemistry.

Personal.—Dr. Joseph C. Beck, Chicago, professor of rhinology, otology and laryngology of the College of Physicians and Surgeons of Illinois, read a paper on the use of radium and other nonsurgical measures in malignant disease of the head and neck, before the section on otology and laryngology of the College of Physicians, February 18.——Dr. Alonzo E. Taylor of the University of Pennsylvania sailed for Europe, February 14, to make a close study of food conditions in the "hungry sections" of the continent.——Dr. C. Lincoln Furbush, director of public health and charities, has been confined to his home with a mild attack of influenza.

VIRGINIA

Improvement of Health Administration.—The United States Public Health Service is conducting a campaign throughout the state to improve health administration in the rural districts. The work is being financed jointly by federal, state and local authorities.

Damages Against Sanatorium.—Henry Cohen, Jr., is said to have been awarded $2,000 damages in his suit for $10,000 which he brought against the Tucker Sanatorium, Richmond, claiming that he sustained injuries as a result of the application of hot water bags, while he was a patient in the institution in December, 1918. The attorneys for the sanatorium made a motion to set aside the verdict on the ground that the amount awarded was excessive.

WASHINGTON

Physicians Meet.—At the recent meeting of the Washington Medical Library Association held in Seattle, Dr. Samuel J. Holmes, was reelected president for the fourteenth term; Dr. J. A. Smith was elected vice president, and Dr. Charles A. Warharnik, secretary-treasurer. The number of active members of the association has increased to 177.——At the meeting of the Pierce County Medical Society held in Tacoma, February 10, the topic of the evening was an open discussion of influenza, inaugurated by Dr. Charles S. Wilson of the city health office.

Laboratory Activities.—The work of the laboratory of the Washington state board of health for January shows a large increase over previous records. The number of examinations totaled 1,318, representing an increase of 67 per cent. over the December total and of 220 per cent. over the monthly average for 1918. There has been an epidemic of diphtheria in the state, and the laboratory has been able to render efficient service in the distribution of large amounts of mediums as well as in the prompt diagnosis of cultures. The increase in the diphtheria diagnostic work is shown by the January total of 728 in contrast to the total of 915 for the entire year 1919. Virulence tests on the carrier cases have been made where requested at the expiration of the quarantine period. The Wassermann work also shows a steady increase since its introduction in 1918. The Wassermann specimens for 1918 totaled 435; for 1919 the total was 1,827, and for January, 1920, it was 278.

WISCONSIN

Hospital Items.—The new Milwaukee Maternity and General Hospital, formerly the Columbia Hospital, has been completely remodeled at a cost of more than $10,000 and was opened for inspection, Dec. 21, 1919.——The Methodist conference is reported to be planning to buy St. Joseph's Hospital, Racine, and will erect an $80,000 hospital building.

CANADA

Hospital News.—The old Toronto General Hospital is to be purchased by the city of Toronto and will be converted into an isolation hospital.

Medical Clinic for Kingston.—Incorporation has been granted to the Kingston Clinical Association, Limited, with a capital of $100,000. The purpose of the association is to conduct a medical clinic which will standardize the systematic examinations. Specialists in each branch of medicine will be in charge, and all modern science equipment will be used. This will make Kingston a more important medical center, as it is the first clinic of the kind to be established in Canada. Dr. Walter T. Connell will be the director.

Public Health Notes.—Representatives of the Academy of Medicine, Toronto, and of the Ontario Medical Council,

headed by Dr. Edmund E. King, recently waited on the Ontario Government in support of the vaccination act. The physicians desire that the act be left unamended, or else strengthened by giving more power to the Ontario board of health and the medical officers of health. Every child should be vaccinated before going to school at least, and there should be subsequent vaccination if necessary. The deputation thought it would be in the interests of the community if vaccination was made compulsory.——Dr. Arthur A. Simard, Quebec, president of the provincial board of health of Quebec, reports the general health of the province as good. Close touch with the origin and spread of smallpox in Ontario has been maintained, and it has been decided not to lift the boundary quarantine against Ontario. Every precaution is also being taken against the admission of influenza into that province. This disease has been present in many points in Ontario, and although not so bad as the epidemic of 1918, a large number of deaths from influenzal pneumonia have been reported.——Toronto has had as many as thirty deaths a day from influenza, and the height of the epidemic has evidently not been reached.——The Winnipeg epidemic of encephalitis lethargica has reached sixty cases with twenty-three deaths, an unduly high mortality rate of 38 per cent. In eighteen cases the brain was examined and showed marked congestion, perivascular infiltration with lymphocytes and plasma cells, and occasionally hemorrhage. Degeneration of the nerve cells was variable, the changes being most marked in the midbrain. Marked lesions were also found in the kidneys. A remarkable epidemic of hiccup occurred in Winnipeg at the same time.

FOREIGN

Fuchs in Spain.—On the invitation of the Junta de Ampliación de Estudios (Postgraduate Studies' Board), Dr. E. Fuchs, professor of ophthalmology at the University of Vienna, will deliver a course of lectures at Madrid on the pathology of eye diseases. In addition, his lectures will be supplemented by explanations by Dr. Cajal.

Deaths in the Profession Abroad.—Dr. **H. Müller,** professor of internal medicine at the University of Zurich until 1918, aged 71. Percussion and auscultation were his hobbies, he used to say, and he used them in perfecting the diagnosis of heart disease so that under his teachings congenital heart disease is detected earlier and in larger proportions in Switzerland, it is said, than elsewhere.——Dr. **Julio Robert,** physician to the French embassy at Madrid and to the French hospital, director of the first infant consultation station at Madrid.

Prize for Research on Nerves.—The *Nederlandsch Tijdschrift* publishes a notice from the University of Leyden to the effect that the Bachiene prize of at least 500 florins, with a parchment certificate, will be awarded for the best work on the recording of the electric phenomena in the living body of certain nerves that have not already been thus studied. The nerves that have been already investigated are the phrenic, the vagus of the lung and the depressor nerves. It is stated that competition is open to all, and the competing articles describing the research can be in Dutch, French, English or German. They must be in the hands of the secretary, H. Krabbe, Witte Singel 28, Leyden, Netherlands, before March 1, 1921.

LATIN AMERICA

Influenza in Havana.—On account of the prevalence of influenza, the health officer of Havana, Dr. López del Valle, has put in force several measures to combat the spread of the disease. Among the measures adopted are the forbidding of all mask balls and children's dances, the placarding of houses where cases occur and the restricting of public funerals.

Tribute to Dr. Vieira de Carvalho.—The *Annaes Paulistas de Medicina e Cirurgia* of São Paulo, Brazil, describes the ceremonies which have been organized by the Santa Casa in honor of the completion of thirty years as director of that public hospital by Dr. Arnaldo Vieira de Carvalho, professor of forensic medicine in the law school there and one of the founders and organizers of the Faculdade de Medicina e Cirurgia. The faculty will present him with a bronze bust at the public meeting planned at the Theatro Municipal, where a gold medal and a parchment describing his record as physician, administrator and citizen will also be presented. Representatives from scientific institutions in other states have announced their intention to attend as well as numbers outside of scientific circles.

GENERAL

Personal.—Drs. William J. Mayo, Rochester, Minn., and Franklin H. Martin, Chicago, who have been touring South America in the interests of a possible Pan-American College of Surgeons, started for home from Santiago, Chile, February 14. In the course of their tour they have visited Buenos Aires, Montevideo and Valparaiso, Chile.

Delegates to World Red Cross Meeting.—The American Red Cross has announced the appointment of the following delegates to the first meeting of the general council of the League of Red Cross Societies at Geneva, Switzerland: Willoughby G. Walling, Chicago; Otis H. Cutler, New York; Mrs. William K. Draper, New York; Samuel Mather, Cleveland, and Eliot Wadsworth, Boston. Mr. Henry P. Davidson, chairman of the board of governors of the league, will accompany the delegation. The council will open in Geneva, March 2, and will continue in session one week. Twenty-four powers have been invited to send delegates from their national Red Cross societies.

Bill to Suppress Bubonic Plague.—To continue the work for suppression and control of bubonic plague in New Orleans, Senator Ransdell of Louisiana has presented to the Senate an amendment to the deficiency bill, appropriating $250,000 for the immediate use of the Public Health Service. This is in accordance with the recent request of the Public Health Service, which has no available funds at the present time to suppress the bubonic plague and similar epidemic diseases. The Clearing House Association of New Orleans is cooperating with the Public Health Service and has agreed to lend the New Orleans Dock Board $500,000 to finance the operations of local authorities in rat-proofing operations on the docks.

Air Service Medical Association.—Medical officers formerly or at present connected with the air service of the Army have organized the Air Service Medical Association of the United States and have elected the following officers: president, Dr. John A. McReynolds, Dallas, Texas; vice presidents, Col. Theodore C. Lyster, New York City; Col. Eugene R. Lewis, Dubuque, Iowa; Col. Isaac H. Jones, Philadelphia; Col. William H. Wilmer, Washington, D. C., and Col. Albert E. Truby, Washington, D. C.; secretary, Major Vernon K. Earthman, Dallas, Texas, and treasurer, Major Robert S. McCombs, Philadelphia. The next annual meeting of the association will be held in the St. Charles Hotel, New Orleans, April 26.

Resolution Regarding Dr. Osler.—At the meeting of the executive committee of the Federation of American Societies for Experimental Biology in Cincinnati, Dec. 30, 1919, a minute was drafted, stating:

> In the death of Dr. Osler, the medical profession has suffered an immeasurable loss. Belonging to no cult, or age, or clime, . . . he was master of the art of medicine in its purest form. . . . As a teacher, he was again master, painting with broad strokes pictures of disease never to be forgotten by the student. An investigator and an inspirer of investigation, a worthy counsellor of brother physicians, a delver in the history of medicine, and an ornament to its letters; and withal so human and of such rare personal charm as to be beloved of all who came in contact with him. Such was the man we mourn. We grieve not only at the loss of leader and friend, but also that death overtook him in the very shadow of the great conflict which brought him so great personal loss and sorrow and robbed him of the mellow years which were so fully his due.

Incidence of Influenza.—The U. S. Public Health Service reports the incidence of influenza for the month of January as being excessive. In thirty-one states which have sent reports, there were over 120,000 cases. The mildness of the disease is generally commented on, and it is believed that many physicians are not reporting mild cases of influenza. Mortality reports from large cities indicate that from May, 1919, to January, 1920, the death rates from influenza and pneumonia were "quite generally below the general average." With the week ending January 17, which marked the beginning of the influenza epidemic in Chicago, the death rate from influenza and pneumonia in Chicago increased slightly, but is still not in excess of the average for the season. Similar significant increases have taken place in New York City, Washington, D. C., Milwaukee, Kansas City, Mo., St. Louis, Cleveland, San Francisco, Albany, N. Y., Atlanta, Ga., Baltimore, Cambridge Mass., Columbus, Ohio, Dayton, Ohio, Indianapolis, Jersey City, N. J., Louisville, Ky., Minneapolis, Newark, N. J., New Haven, Conn., Philadelphia, Pittsburgh, Richmond, Va., St. Paul, Syracuse, N. Y., and Toledo, Ohio.

Regulations for Prescribing Liquors

A circular issued by the Commissioner of Internal Revenue gives explicit directions regarding Form 1403, prescription blanks for practicing physicians who have secured permits to prescribe liquor. As stated in the abstract of Internal Revenue Regulations 60 (THE JOURNAL, Jan. 31, 1920, p. 342), it is first necessary for practicing physicians to secure a permit to prescribe. Application for such a permit must be made on Form 1404, in triplicate, sworn to before a notary public. These blanks can be secured from the federal prohibition director of the state or from the collector of internal revenue of the district in which the physician making application is located. Permits will be issued only to physicians legally qualified to practice under the laws of the state. The three copies when filled out are returned to the federal prohibition director. After receiving a permit to prescribe, the physician is then supplied with Form 1403 on which prescriptions for alcohol and alcoholic liquors must be made out. These prescription blanks are furnished in books of 100 blanks each. A sample blank is reproduced in the adjoining column. The books are serially numbered, and each prescription blank in each book is also serially numbered, with stubs attached. Books must be returned to the director when the prescription blanks have all been used, or sooner if ordered by the director or the Commissioner of Internal Revenue. All unused, mutilated or defaced blanks must be returned with the books.

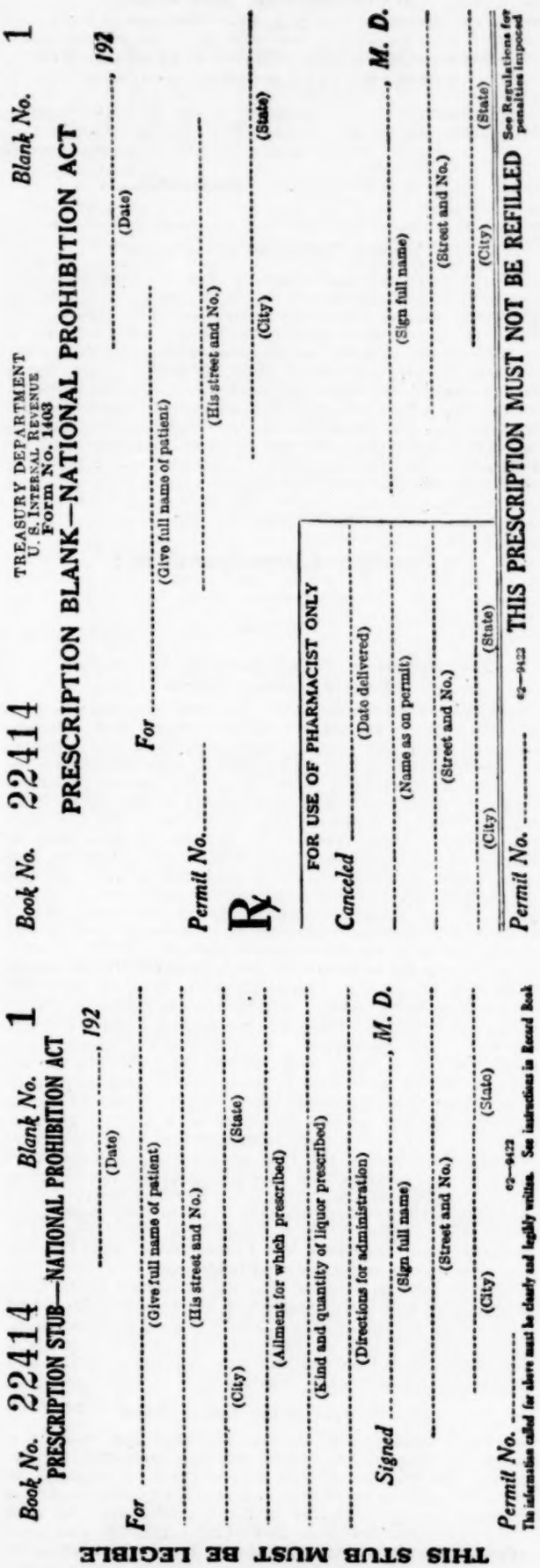
The state directors and the district collectors of internal revenue by whom these prescription books will be issued are directed to keep a record of the books issued to each physician. Prescription books can be secured by physicians only after they have made application in triplicate on Form 1404 for a permit to prescribe and after the permit has been issued on Form 1405. No bond is required for such a permit. A register is also issued to each physician in which must be recorded all prescriptions written for alcohol or liquors.

Instructions regarding the administration of liquors in accordance with the regulations are explicit. They read as follows:

"Regulations No. 60 provide that distilled spirits, wines and alcoholic medicinal preparations may be administered by physicians to their patients for medicinal purposes in cases where the use of such liquor is believed necessary to afford relief of some known ailment, and delay in procuring the same through a retail pharmacist upon a prescription might result in loss of life, aggravation of the ailment, or intense suffering. Physicians may make application on Form 1404 for permit for this purpose, and if approved a permit will be issued by the commissioner to the physician to use the liquor in the course of his practice, and he may obtain as much as six (6) quarts of liquor during any calendar year, to be administered as stated above, but he may not sell or furnish the same to such persons or to any other persons." Permits to prescribe may be issued by state prohibition directors, but permits to physicians to use liquor for administration to their patients must be issued by the Federal Prohibition Commissioner.

"Physicians are not permitted to write prescriptions for liquor for their own use, and the law provides that not more than a pint of spirituous liquor to be taken internally shall be prescribed for use by the same person within any period of ten days, and no prescription shall be filled more than once."

Druggists qualified to sell medicinal liquors are notified that all prescriptions for medicinal liquor must be on Form 1403 except that in any case where a physician holding a permit to prescribe liquor is not in possession of such a form due to any justifiable reason and where delay in procuring this form might result in loss of life, aggravation of the illness or intense suffering, he may prescribe intoxicating liquor on a form other than Form 1403 provided such prescription contains all of the information called for on Form 1403 and a record of the prescription is made.



THIS STUB MUST BE LEGIBLE

Book No. 22414 Blank No. 1
PRESCRIPTION STUB—NATIONAL PROHIBITION ACT

..... (Date), 192

For .....
(Give full name of patient)

.....
(His street and No.)

..... (State)
(City)

.....
(Ailment for which prescribed)

.....
(Kind and quantity of liquor prescribed)

.....
(Directions for administration)

Signed ....., M. D.
(Sign full name)

.....
(Street and No.)

..... (State)
(City)

Permit No. .....
The information called for above must be clearly and legibly written. See instructions in Record Book
52—9422

Book No. 22414 Blank No. 1

TREASURY DEPARTMENT
U. S. INTERNAL REVENUE
Form No. 1403

PRESCRIPTION BLANK—NATIONAL PROHIBITION ACT

..... (Date), 192

For .....
(Give full name of patient)

Permit No. .....
(His street and No.)

℞ .....
(City) (State)

FOR USE OF PHARMACIST ONLY

Canceled .....
(Date delivered)

.....
(Name as on permit)

.....
(Street and No.)

.....
(City) (State)

....., M. D.
(Sign full name)

.....
(Street and No.)

.....
(City) (State)

Permit No. ..... 52—9422 THIS PRESCRIPTION MUST NOT BE REFILLED See Regulations for penalties imposed

Government Services

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

ILLINOIS
Chicago—Benjamin, H. W.

MICHIGAN
Detroit—Marsh, A. R.

NEW YORK
Brooklyn—Schneider, S.
New York—Burk, S. B.
Goldberg, R. M.

TENNESSEE
Flatwood—Sharp, T. H.

Disease Conditions in the Army

For the week ending February 6, it is reported that influenza continues at many of the large camps and stations, principally among the eastern and southern states. The number of new cases of pneumonia for that week was double the number reported for the previous week. Admission and noneffective rates showed a slight decline. There was a marked decline in the number of new cases of influenza, measles and pneumonia occurring among the American forces in Germany. The incidence of pneumonia in the camps in the United States is about one tenth of that accompanying influenza at the height of the 1918 epidemic. The mortality percentage was also much lower.

Foreign Correspondence

PARIS

Jan. 15, 1920.

The Attitude of French Societies of Learning Toward German Savants

Notwithstanding the fact that the treaty of peace has gone into effect, there are as yet no indications that relations between French and German men of science are about to be resumed. It will be recalled that it was the attitude of the ninety-three signatories of the all too famous manifesto of German intellectuals that induced our academies to break with the German savants. Before the war, Germany had, to a certain extent, reserved to herself the monopoly of treatises on natural science, and France saw fit to buy and use them, but does not propose to do so longer. The Sociétés françaises de sciences naturelles have recently formed a federation for the purpose of combating German enterprise in this field. The Sociétés françaises de chimie have also formed a federation with the same object in view.

It is interesting to note that the attitude of German men of learning during the Franco-Prussian War of 1870-1871 was far from being correct, just as was the case in the War of 1914-1918. Dr. Léon Cheinisse has published some extracts from the correspondence of the celebrated German jurist Rudolf von Ihering, who, under date of Aug. 23, 1870, wrote:

"Happy is the man who is permitted to play a part in this towering flight of our people! . . . Never before in the history of any people has there been such a glorious epoch. . . . It is like the German tale of Cinderella, who was suddenly raised to the rank of princess. Thanks be to these dogs of Frenchmen for having, up to the present time, treated our people as Cinderella was treated. The application of the story has thus been brought home to their conscience, and the blows have fallen on their own shoulders. The humiliation and weakness of France must ever remind Frenchmen of our cause for gratitude. . . ."

It may perhaps be assumed that the arrogance of the German mentality, which still persists in spite of everything, and of which THE JOURNAL recently cited a typical example (THE JOURNAL, Dec. 20, 1919, p. 1889), will be no slight obstacle to the resumption of normal relations with the scientists and scholars of the empires of "Mitteleuropa."

Child Welfare in the United States

Dr. P. F. Armand-Delille, who was sent last year on a mission to the United States, recently reported to the Académie des sciences morales et politiques his impressions of the child welfare movement in that country. In his report he brought out the fact that in the United States the care of children's health has been thoroughly organized, and commended the system of visiting nurses; the consultations held in the homes with mothers and prospective mothers, the teaching of hygienic rules, and the care of the child who may be ill. He also emphasized the value of the American federation of charity organizations, which made possible a better utilization of charity funds from public and private sources. He found that the heartiest cooperation prevailed, which resulted in the greatest benefit to public health in general.

This visit of Dr. Armand-Delille furnishes an additional example of the salutary influence that the United States is destined to exert on the development of public hygiene in France. In a previous letter (THE JOURNAL, Jan. 31, 1920, p. 338) I mentioned other evidences of such influence.

Antipyrin and Anaphylaxis

Dr. Fernand Widal, professor of clinical medicine at the Faculté de médecine de Paris, in collaboration with Dr. Pasteur Vallery-Radot, has made an interesting report to the Académie des Sciences on an anaphylactic state produced by a nonalbuminoid substance—antipyrin. A woman, aged 24, had formed the habit of taking antipyrin every month for the relief of headache. During a period of nine years no untoward effects were produced, but at the end of this period anaphylaxis appeared, together with an intense pruritus at the level of the chin and lips, which became red, swollen and painful. This anaphylactic state was so persistent that it continued for seven years after the patient had completely abstained from the drug. Widal and Pasteur Vallery-Radot have been investigating for the purpose of discovering how small a dose must be to exclude all possibility of accident, and they find that it lies between 0.0001 and 0.0002 gm. Patients to whom these minute doses are administered for a period of two months are desensitized completely and definitively and they can take antipyrin tablets without feeling the slightest discomfort.

Widal remarked that analogous conditions doubtless existed for a number of substances that are ingested and inhaled. He mentioned particularly the case of a merchant who, after having sold mutton for more than thirty-seven years, was no longer able to handle mutton without having an attack of asthma. Our temperamental nature may, then, be continually modified, by the process of sensitization and desensitization; by anaphylactic shocks that take place totally unknown to us. It seems that asthma, migraine, and certain other morbid states with which man is affected during certain periods of life, are obedient to the laws of anaphylaxis.

Medical Relations with Poland

At the instance of Professor Letulle, the first meeting of the Comité médical franco-polonais was held recently at the Faculté de médecine de Paris. This committee, which was presided over by Professor Roger, dean of the Faculté de médecine, counts among its members a number of physicians of Polish extraction; for example, Dr. Babinski, hospital physician of Paris; Dr. Danysz of the Institut Pasteur, and Dr. Ockinzyc, hospital surgeon of Paris. A similar committee has been appointed in Warsaw, and the hope is expressed that before long, by means of journeys in the interest of science and by courses of lectures, scientific relations between Poland and France may be restored.

Vehicles for the Use of Cripples

Marshal Pétain has taken steps to promote an exhibit of vehicles for the use of cripples, which will be held in the Grand-Palais.

LONDON

Jan. 24, 1920.

A New Surgical Organization

The Association of Surgeons of Great Britain and Ireland, at the inaugural meeting of which Sir Rickman J. Godlee presided, owes its inception to the suggestion of Sir Berkeley Moynihan in 1914. England was then almost alone in having no representative society for the adequate discussion of surgical topics. At a meeting held at the Royal College of Surgeons, May 26, 1914, a committee was appointed to draw up rules and to circularize the members of the surgical staffs of hospitals connected with teaching schools. The war interrupted the project, and after more than five years, organization of the association has been effected. Two main principles have been kept in view: First, the active membership of the association will be limited both in respect to members and to age. Second, the discussions will be free, in every meaning of the word and the expression of thought will be untrammeled by the dread that what might be said confidentially to a friend will be repeated in a garbled form from the

housetops. No reports will be sent to the journals or newspapers, but the fellows will be at liberty to publish their communications when and where they choose, appropriately in the *British Journal of Surgery*. Experience of other countries shows the advantage of holding meetings at different centers, but it is proposed that at least every third meeting shall be held in London. It is hoped that stagnation in the directorate will be avoided by the annual change of president and one third of the ordinary members of council, and continuity will be secured by the more or less permanent tenure of office by the honorary treasurer and secretary.

Miners' Nystagmus

At a meeting of the North Staffordshire Institute of Mining Engineers, Dr. T. L. Llewellyn, medical officer to the collieries of North Staffordshire, declared that deficiency of illumination is the dominating factor in the causation of miners' nystagmus, and, in his opinion, so important that all other factors become insignificant. In the prevention of the disease three main considerations must be taken into account: 1. Nystagmus is a disease of gradual onset; the average number of years of underground life before failure of sight is twenty-five. 2. The illumination in open-light pits is five times that in safety-light pits. 3. Cases of nystagmus, although uncommon, do occur in open-light pits.

The True Nature of Multiple Exostoses

At a meeting of the Medical Society of London, Prof. Arthur Keith read an important paper on the true nature of multiple exostoses. From the study of the roentgen-ray records of four cases of multiple exostoses he had come to the conclusion that the disease should be removed from the category of tumors and placed among the disorders of growth under the name suggested by Morley Roberts—diaphysial aclasis. The exostoses which attracted the attention of the clinician are merely secondary results which mask one of the most remarkable disorders of growth. In one case the patient was a private, aged 20, in a labor battalion who was diagnosed in the Third Canadian General Hospital as suffering from multiple exostoses. The lower ends of the femurs and the upper and lower ends of the shafts of the tibias represented an arrest of bone development, which was to be anticipated if John Hunter's teaching on the growth of bones was correct. Hunter was the first to perceive that the shaft of the long bones grew by a double process: In the first process new bone is laid at the extremities of the shaft in the diaphysial lines; in the second, which Hunter named the "modeling process" the cancellous bone laid down is rebuilt, trimmed and gradually converted into an architectural part of the shaft. In diaphysial aclasis the modeling process is arrested; hence between the properly formed part of the shaft and the epiphysial end there is interposed an irregular cylinder of imperfectly modeled bone, on the surface of which there are several outgrowths. Further investigation of the case showed that the diaphysial ends of all the bones of the body manifested a similar disturbance of growth, the disturbance being greatest at the lines where growth is most vigorous and prolonged. A clue to the true nature of the disease is given by noticing its incidence on the skeleton. Bones formed in membrane or in cartilage are not affected. It is only where the two processes—membrane formation and cartilage formation—come into juxtaposition that this disorder of growth occurred. Hence it is most marked at the growing ends of diaphyses of long bones, especially those where growth is greatest. The proximal end of the humerus and the distal ends of the radius and ulna show a much greater disturbance of growth than the shafts which end at the elbow joint. In the lower extremity, growth is greatest at the diaphysial ends directed toward the knee, and there the disturbance is greatest; but as there is also considerable growth at the proximal end of the shaft of the femur and at the distal ends of the tibia and fibula, these parts also exhibit ample evidence of the disease. At these sites two different kinds of bone formation are in progress. As bone is laid down within the growth disk (epiphysial line) in cartilage a covering of fibroblastic bone is being deposited by the growing margin of the overlying periosteum. We have so concentrated our attention on the process of ossification, which takes place in the cartilaginous growth disk, that we have left out of sight the equally important processes which go in the ferrule of periosteum which surrounds the growth disk. Consequently we are not prepared to encounter a dislocation in the harmony with which these two processes ought to proceed. In achondroplasia the arrest of the growth is a partial cessation of the growth process which goes on within the cartilaginous disk. In diaphysial aclasis the arrest lies in the growing edge of the periosteal ferrule. Hence large areas of cartilage-formed bone are left exposed. This arrest of periosteal formation is only temporary. The modeling process which is attended by the deposition of periosteal bone goes on for years after all growth in length has ceased. This conception of multiple exostoses is not new. Hunter emphasized its constitutional nature. Paget recognized it as an ossific diathesis due to some morbid condition of the blood. Several German writers have recognized it as a disturbance of growth.

Nephritis and Military Service

The discovery during the war of "trench nephritis" has led the Medical Research Committee to institute an inquiry into the condition of the soldier's kidney. The main work devolved on Capt. Hugh MacLean, whose report involves an examination under war conditions of 50,000 men. He began by attempting to find out whether there was a tendency during training for symptoms of kidney trouble to develop in ordinary recruits. He found that only 2 per cent. gave any indication of kidney mischief. He concluded that no injurious effects are produced on the kidney by any of the conditions associated with training for active service. The soldier during training does not appear to be more liable to deleterious kidney effects than is the civilian in ordinary life. No relation between albuminuria and occupation was found. Long service exercised no ill effects on the incidence. It was thus evident that trench nephritis was not a condition carried over from civil life. Further work confirmed this view. Conditions such as length of service, previous illness, age and occupation seemed to play no part in its etiology. Many of the cases developed in men who had been in the front area only a short time. Other factors—diet, infection, water supply and so on—were excluded. By elimination, the conclusion was reached that the most probable cause of trench nephritis is infection by means of body vermin, probably lice. The mortality from the disease was low in the first instance; but relapses occurred, and some of the cases became chronic. They were found to fall into the same groups as ordinary Bright's disease—interstitial and parenchymatous.

Piteous State of Wounded Serbians—Serbian Surgeons to Be Trained in England

Sir John Lynn-Thomas, the orthopedic surgeon of Cardiff, who returned recently from Serbia, paints a gloomy picture of the state of the wounded and disabled in that country. The land is filled with cripples, many of whom could be cured or improved by modern orthopedic methods. The contrast between what has been accomplished in England by Sir Robert Jones and his co-workers and the state of the broken soldiers of our ally is piteous. These men are without the simplest appliances, and the country lacks surgeons with the requisite knowledge of the new methods. It is felt by the Serbian Red Cross Society in Great Britain that the proper method to help these soldiers is to invite Serbian surgeons to come to this country to study British orthopedics under our most distinguished men. This invitation has been sent, and a favorable reply is expected.

RIO DE JANEIRO

Jan. 10, 1920.

Bubonic Plague

In the shipments of alfalfa and wheat imported from Buenos Aires, rats infected with bubonic plague were discovered. Shortly after, several cases of plague occurred among the men working on the docks at Rio de Janeiro. There were ten cases reported, but no deaths.

Institute of Medical Research

Dr. Rocha Lima, formerly of the Instituto de Manguinhos, Rio de Janeiro, and lately professor at the university and chief of the section on pathologic anatomy in the institute of tropical diseases in Hamburg, has been offered the position of director for the Butantan Institute for Medical Research. He is expected in Rio at the end of January, when he will give a definite answer.

Medical School Changes

Dr. Alfredo de Andrade has been promoted to professor of analytic chemistry, and Dr. Adelino Pinto has been appointed in his place.

Federal Department of Public Health.

The law creating the federal department of public health was approved by President Pessoa, January 20. As men-

tioned in a former letter, the creation of a ministry of public health did not meet the approval of congress. There will be three boards under the supervision of the department, namely, a board of health for Rio de Janeiro, a board of rural sanitation, and a board of maritime and fluvial prophylaxis. Besides these, there will be sections dealing with sanitary statistics; sanitary engineering; the supervision of drains; the prevention of leprosy and venereal diseases; the supervision of the practice of medicine, pharmacy, dentistry and obstetrics, and hospitals for contagious diseases and child welfare. The federal government takes charge of meat and food inspection and of all the functions of the municipal health service.

Under the law, a supreme council of hygiene and public health is appointed. The following officials are members of the board: the president of the department of health, the directors of the above mentioned divisions, the professor of sanitary engineering in the polytechnic school, the surgeon-general of the army, the chief of the navy medical corps, and the government legal adviser. The exclusion from this board of the professor of hygiene and of the dean of the medical school, as well as the president of the Academia de Medicina, was not favorably received in medical circles.

The cost of rural prophylaxis and sanitation of the interior will be met by a special tax on alcoholic drinks, by the income from the different laboratories pertaining to the department of the interior, 15 per cent. of the revenue of gambling houses, clubs and casinos at health resorts, and a stamp tax of from 20 to 200 reis on all tubes of serums, vaccines, opotherapic products and on all drugs either foreign or domestic. Public opinion is not in favor of licensed gambling.

Infectious Disease in Brazil

In an address to medical graduates, Dr. Afranio Peixoto protested vehemently against the erroneous impression that Brazil is one great hospital. Many prominent physicians seem intent to convince the public that there are scarcely any healthy persons in the population of 25,000,000, and that those who are lucky enough to escape from malaria or hookworm disease are infected with the Brazilian trypanosomiasis. Just because Chagas saw some cases of the disease which bears his name in Lassance (state of Minas), one physician has gone to the extreme of asserting that 15 per cent. of the population is infected with *Trypanosoma cruzi*.

Election of Officers

At a meeting of the Sociedade de Medicina e Cirurgia, December 30, the following officers were chosen: president, Prof. Fernando Magalhães; vice presidents, Dr. Julio Monteiro and Dr. Plinio Marques; secretary-general, Dr. Leonel Gonzaga; secretaries, Dr. Edilberto Campos, Dr. Arnaldo de Moraes and Dr. Theophilo de Almeida; speaker, Dr. Octavio Ayres; librarian, Dr. Catao; custodian of the museum, Dr. Del Vecchio, and editor of the annals, Dr. Guarany Goulart.

Marriages

EUSTACE HAROLD PRESCOTT, Lieut., M. C., U. S. Navy, Edgefield, S. C., to Miss Alpha Hammond of Edgefield County, S. C., at Augusta, Ga., February 1.

BENJAMIN FRANKLIN DAVIS, Chicago, to Miss Marie Lucile Brickson of Stoughton, Wis., February 7.

JAMES SYLVESTER ANTLE, Utica, Ill., to Miss Margaret Walter of LaSalle, Ill., in Chicago, January 17.

ALBERT WARD MCCALLY, Dayton, Ohio, to Miss Edna Fiegenbaum of Edwardsville, Ill., December 25.

CHARLES LYNDON OUTLAND, Tarboro, N. C., to Miss Alice Louise Sadler of Richmond, Va., January 21.

KINTON DORION, Lawrence, Mass., to Miss Angelina Tessier of New Bedford, Mass., January 26.

J. J. FITZGERALD, Granite City, Ill., to Miss Georgia Coudy of Louisville, Ky., December 3.

PAUL WESLEY BEST, Atlanta, Ga., to Miss Louise Cotton of Waco, Texas, January 21.

CHARLES A. WADE to Miss Florence Marie McGeehan, both of Chicago, February 8.

LYMAN OVERSHINER, Indianapolis, to Miss Ella Ingles, in Indianapolis, December 13.

Deaths

Correction.—The obituary notice of Dr. William J. Humphrey, Union City, Pa., which appeared in THE JOURNAL of Dec. 27, 1919, was incorrect. Dr. Humphrey informs us that he is alive and well. The source of information was a notice which appeared in an Eastern medical journal.

Melvin George Overlock, Worcester, Mass.; Baltimore Medical College, 1896; aged 54; a member of the Massachusetts Medical Society; a specialist in tuberculosis, and instrumental in securing legislation requiring the maintenance of tuberculosis hospitals in cities and towns of Massachusetts; state medical health inspector; a trustee of the Worcester City Hospital since 1900; died in that institution, January 30, from diabetes.

Oliver Thompson Hyde ⊕ Albuquerque, N. M.; College of Physicians and Surgeons in the City of New York, 1901; aged 44; a specialist in tuberculosis, and for six years director of the St. Joseph Sanatorium, Albuquerque; for several years resident director of a sanatorium in Silver City, N. M.; formerly a member of the faculty of Drake University, Des Moines, Iowa; died, February 2, from tuberculosis.

Royal A. Gove, Tacoma, Wash.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; aged 63; a member of the Washington State Medical Association; for twelve years secretary of the Pierce County Medical Association; for six years a member of the State Board of Medical Examiners, and for two years its chairman; from 1892 to 1896 a member of the city council; died, January 21.

Francis Pollock Ball ⊕ Lock Haven, Pa.; University of Pennsylvania, Philadelphia, 1877; aged 63; once president of the Medical Society of the State of Pennsylvania; who was one of the guests of honor at a banquet given by the Clinton County Medical Society in 1918; chief surgeon of the Lock Haven Hospital; died in Williamsport, Pa., January 31, from angina pectoris.

William Henry Cook, Coffeen, Ill.; Washington University, St. Louis, 1867; aged 85; a member of the Illinois State Medical Society; a charter member of the District Medical Society and for two years its secretary; one of the organizers of the Montgomery County Medical Society, and at one time its president; died, January 28, from senile debility.

James H. Shorter ⊕ Macon, Ga.; Long Island College Hospital, Brooklyn, 1875; aged 69; oculist and aurist to the Macon Hospital and to the Southern Railway; a member of the American Academy of Ophthalmology and Oto-Laryngology, and of the American Laryngological, Rhinological and Otological Society; died, February 2.

Francis Torrens Stewart ⊕ Philadelphia; Jefferson Medical College, 1896; aged 45; professor of clinical surgery in his alma mater; since 1910 surgeon to the Jefferson and Germantown hospitals, and for twenty-five years a member of the surgical staff of the Pennsylvania Hospital; author of a manual on surgery; died, February 4, from uremia.

Claude Dewes Hamilton, Canton, Ohio; College of Physicians and Surgeons, Baltimore, 1913; aged 31; a member of the Ohio State Medical Association; who served as captain, M. R. C., U. S. Army, and was discharged, April 4, 1919; died in Phoenix, Ariz., January 30, from pulmonary tuberculosis.

Fred Grey Benton ⊕ Major, M. C., U. S. Army; University of Syracuse, N. Y, 1912; aged 33; who entered the Medical Reserve Corps, June 29, 1916; was graduated from the Army Medical School, June 10, 1917, and promoted to captain and major, Aug 3, 1918; died at Fort Aurora, January 18.

Lyle Gunn Thornton ⊕ Lieut., M. C., U. S. Army, Westpoint, Texas; Chattanooga (Tenn.) Medical College, 1897; aged 45; physician of Colorado County, Texas, and assistant city physician of Westpoint; died at Fort Sam Houston, San Antonio, Texas, January 15., from valvular heart disease.

Ridgeley Brown Warfield ⊕ Baltimore; University of Maryland, Baltimore, 1884; aged 56; professor of surgery in his alma mater; formerly associate professor of anatomy in Baltimore Medical College; chief surgeon of the Maryland General Hospital; died, February 4, from heart disease.

Harry A. Medernach, Portland, Ore.; Chicago College of Medicine and Surgery, 1904; aged 42; who served during the war as a secretary of the Knights of Columbus, at Camps Lewis, Ballard, and Vancouver, Wash., died, January 28.

⊕ Indicates "Fellow" of the American Medical Association.

Richard Cooke Harley, Newark, N. J.; George Washington University Medical School, Washington, D. C., 1904; aged 41; a member of the Medical and Chirurgical Faculty of Maryland; formerly health officer of Prince Georges County, Md.; died, February 4, from pneumonia.

Henry Brown Conrad, South Bend, Ind.; Johns Hopkins University, Baltimore, 1916; aged 29; who resigned from an internship in Johns Hopkins Hospital to enter the Navy, and was relieved from active duty with the U. S. N. R. F., Nov. 26, 1919; died, January 29, from pneumonia.

Crandall Loughery, Montreal; McGill University, Montreal, 1918; ager 28; who served with the Canadian Army Medical Corps in France in 1918 and 1919; a member of the staff of the Montreal General Hospital; died in that institution, Oct. 25, 1919, from bronchopneumonia.

Peter Winston, Farmville, Va.; University of the City of New York, 1860; aged 83; a member of the Medical Society of Virginia; surgeon in the Confederate Service during the Civil War; for fifteen years physician to the State Normal School; died, about January 30.

Sally Robinson Creighton Best, New York City; Cornell University, New York City, 1899; aged 50; a member of the executive committee of the American Woman's Hospitals, and active during the war in the censorship of drugs for the government; died, February 6.

Frank C. Hershey, Carmel, Ind.; Medical College of Indiana, Indianapolis, 1894; aged 53; a member of the Indiana State Medical Association; health officer of Hamilton County; died, February 4, from septicemia, due to a slight scratch of the hand.

John W. Starr, Pocahontas, Iowa (license, Iowa, examination, 1889); aged 61; a member of the Iowa State Medical Society; once secretary and treasurer of the Pocahontas County Medical Society, and city physician; died, January 17, from angina pectoris.

William Francis Gillim, Chicago; University of Louisville, Ky., 1871; aged 73; a member of the Kentucky State Medical Association; for many years a practitioner of Owensboro; while returning to his old home in Owensboro, February 4, died at Evansville, Ind.

Boyer Smith Kofford, Youngstown, Ohio; University of Buffalo, N. Y., 1917; aged 25; lieutenant, M. C., U. S. Army, with service overseas and discharged, Feb. 15, 1919; a member of the staff of the Youngstown Hospital; died, January 27, from pneumonia.

Frank Boutelle Fuller ✠ Pawtucket, R. I.; Harvard University Medical School, 1878; aged 66; acting superintendent of health of Pawtucket; for several years medical examiner (coroner) for the Pawtucket district; died, January 23, from heart disease.

Beauregard Ross Merritt, Fancy Farm, Ky.; Marion-Sims Medical College, St. Louis, 1891; aged 50; a member of the Kentucky State Medical Association; one of the owners of the Dawson Springs Sanitarium; died in that institution, January 24.

Marvin William Duckwall, Dayton, Ohio; Miami Medical College, Cincinnati, 1902; aged 40; a member of the Ohio State Medical Association; for many years a member of the board of St. Elizabeth's Hospital; died, February 1, from tuberculosis.

Milton Harlan Cloud ✠ Masontown, Pa.; Miami Medical College, Cincinnati, 1886; aged 62; a director and for several years vice president of the Masontown Bank; vice president of the Masontown Glass Company; died, January 27, from meningitis.

Robert Bruce Duncan, Petaluma, Calif.; Missouri Medical College, St. Louis, 1873; aged 73; coroner and public administrator of Colusa County in 1888; twice health officer of Petaluma; died in the Petaluma Hospital, January 3.

Joseph P. Ralston, Jr. ✠ Houston, Texas; University of Texas, Galveston, 1896; aged 49; was crushed between the elevator and the wall of the elevator shaft in the Kress Building, Houston, February 2, and instantly killed.

Raymond Jack Hauser ✠ Lieut., M. C., U. S. Army, Danville, Pa.; University of Pennsylvania, Philadelphia, 1910; aged 33; on duty at Camp Grant, Rockford, Ill., died, January 18, from pneumonia complicating influenza.

Alexander John Macaulay, Brockville, Ont.; Trinity Medical College, Toronto, 1888; aged 55; medical officer of health of Brockville; president of the Ontario Medical Health Officers' Association in 1906; died, October 27.

William Alexander Molson, Montreal; McGill University, Montreal, 1874; M.R.C.S. (Eng.), 1875; coeditor of the *Canada Medical and Surgical Journal* from 1879 to 1882; died, January 5, from cardiorenal disease.

Richard F. Boonstra, Detroit; University of Michigan, Ann Arbor, 1913; aged 31; lieutenant, M. C., U. S. Army; on duty with the air service and discharged, March 4, 1919; died, January 30, from pneumonia.

Rollin Alanson Curtiss, Stratford, Conn.; University of the City of New York, 1893; aged 53; a member of the Connecticut State Medical Society; died, January 28, from cerebral hemorrhage.

Logan M. Thompson, Atlanta, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1880; aged 61; a member of the Missouri State Medical Association; died in Macon, Mo., January 19.

Charles Henry Waters, Dawsonville, Md.; University of Maryland, Baltimore, 1871; aged 70; for many years pastor of the Trinity Baptist Church, near Dawsonville, Md.; died, January 26.

Morgan Shell Evans, New Orleans; Tulane University, New Orleans, 1917; aged 26; an intern in the State Charity Hospital, Natchez, Miss.; died, January 21, from tubercular meningitis.

William Harrison Wilson ✠ Johnson City, N. Y.; Bellevue Hospital Medical College, 1888; aged 56; physician and surgeon to the Binghamton City Hospital; died, about January 23.

J. Sion Smith, Fort Wayne, Ind.; Fort Wayne (Ind.) College of Medicine, 1891; aged 71; superintendent of several branches of the Bass foundries, Fort Wayne; died, January 24.

Jesus Monagas, Mayaguez, P. R.; University of Barcelona, Spain, 1883; aged 58; a member of the Porto Rico medical Association; died, January 27, from cirrhosis of the liver.

Edwin T. Myers, Netawaka, Kan.; Western Reserve University, Cleveland, 1876; aged 63; a member of the Kansas Medical Society; died, January 23, from chronic nephritis.

William H. Clarkson, Blair, Okla.; Memphis (Tenn.) Hospital Medical College, 1889; aged 58; a member of the Oklahoma State Medical Association; died, December 13.

Otto James Blessin, Galesburg, Ill.; Hahnemann Medical College, Chicago, 1901; aged 40; captain, M. R. C., U. S. Army, and discharged, Jan. 18, 1919; died, January 29.

James Emmett Vaughan ✠ Lynchburg, Va.; Lincoln Memorial University, Knoxville, Tenn., 1893; aged 60; died, Dec. 18, 1919, from chronic interstitial nephritis.

William A. Paschall, Franklin, Tenn.; Vanderbilt University, Nashville, Tenn., 1881; aged 60; died at the Woman's Hospital, Nashville, January 31, from pneumonia.

John Alexander Landis, Oklahoma City; University of Tennessee, Nashville, 1860; aged 82; died at the home of his daughter in Brownsboro, Texas, January 24.

Joseph William Martin, DuBois, Neb.; University of Nebraska, Omaha, 1903; aged 52; died at the home of his mother in Pawnee City, Neb., January 23.

Charles Ash Bower ✠ Mitchell, S. D.; Hahnemann Medical College, Chicago, 1900; aged 44; was drowned while bathing at Lake Worth, Fla., January 21.

Caleb F. Elkins, Liege, Mo.; American Medical College, Eclectic, St. Louis, 1901; mayor of Liege and health officer of Montgomery County; died, January 26.

John F. Shaw, Wilkes-Barre Pa.; Medico-Chirurgical College of Philadelphia 1895; aged 66; also a druggist; died, February 1, from cerebral hemorrhage.

William Gwathmey, Beulahville, Va.; Medical College of Virginia, Richmond, 1898; aged 40; a member of the Medical Society of Virginia; died, January 5.

Edward Hills Lake, San Francisco; St. Louis College of Physicians and Surgeons, 1895; while on his return from Australia, died at sea, January 28.

Patrick James Hughes, Lawrence, Mass.; University and Bellevue Hospital College, 1907; aged 41; died, January 26, from pulmonary tuberculosis.

Robert G. Langsdale, Middletown, Ohio; Medical College of Ohio, Cincinnati, 1881; aged 71; died in the Middletown City Hospital, January 26.

H. Moses Brooks, Olivebranch, N. C.; University of Maryland, Baltimore, 1879; aged 64; died, January 21, in a hospital in Charlotte, N. C.

John M. Grant ✠ St. Louis; Missouri Medical College, St. Louis, 1889; aged 55; a specialist in surgery; died, January 29, from pneumonia.

A. Malen Spangler ✠ Pageton, W. Va.; College of Physicians and Surgeons, Baltimore, 1892; aged 53; died, January 18, from diabetes.

Joseph L. Anderson, Tarentum, Pa.; College of Physicians and Surgeons, Baltimore, 1883; aged 65; died, January 27, from pneumonia.

James T. Parker, Chauncey, Ga.; Southern Medical College, Atlanta, 1897; aged 44; died in a hospital in Macon, Ga., January 30.

Joel J. Foulon ✠ East St. Louis, Ill.; Missouri Medical College, St. Louis, 1887; aged 57; died, January 23, from heart disease.

John Maynard Gulick, El Paso, Ill.; Northwestern University Medical School, 1891; aged 53; died, January 15, from endocarditis.

Nicholas R. Marshall, Evanston, Ill.; Rush Medical College, 1867; aged 76; a veteran of the Civil War; died, February 3.

Alban Thomas Cuzner, Gilmore, Fla.; College of Physicians in the City of New York, 1864; aged 80; died, January 18.

Edward Martin Cherry, San Francisco; Cooper Medical College, San Francisco, 1899; aged 46; died, about January 30.

Cyrus V. Luke ✠ Woodworth, Ill.; Illinois Medical College, Chicago, 1899; aged 44; died, January 16, from brain tumor.

Joseph Talbot Maclean, New York City; Bellevue Hospital Medical College, 1876; died, January 28, from pneumonia.

John M. Pierce, Rogersville, Tenn. (license, Tennessee, 1889); aged 73; for many years a druggist; died, December 16.

Archibald Gooding Servoss, Havana, Ill.; Jefferson Medical College, 1886; aged 54; died, January 22, from gastric ulcer.

Oliver Frank Harper, Baltimore; Atlanta (Ga.) School of Medicine, 1911; aged 30; also a chemist; died, January 22.

Emory Lanphear, St. Louis; Missouri Medical College, St. Louis, 1881; aged 60; died, in Citrus Park, Fla., February 6.

Philip Gray Sanderson, Detroit; University of Illinois, Chicago, 1899; aged 53; died, January 28, from pneumonia.

Ralph Emerson Buck, Newfield, N. J.; Rush Medical College, 1894; aged 49; died, February 4, from acute gastritis.

James A. Fraser, Lexington, Mich.; University of Vermont, Burlington, 1886; aged 60; died, about January 29.

L. C. Goneke, Springvale, Ga.; Atlanta (Ga.) Medical College, 1884; aged 60; died, January 27, from dysentery.

Frederick Woodhull, Hartney, Man.; Trinity Medical College, Toronto, 1886; aged 56; died in October, 1919.

Walter Westlake Hoare, Walkervill, Ont.; Queens University, Kingston, Ont., 1864; aged 83; died, January 29.

Samuel L. Inman ✠ El Paso, Texas; Marion-Sims College of Medicine, St. Louis, 1897; aged 54; died, recently.

Edmund B. Echlin, Ottawa, Ont.; Queens University, Kingston, Ont., 1891; aged 56; died, Dec. 12, 1919.

Sabritt Scruggs, Rolla, Miss.; Kentucky School of Medicine, Louisville, 1866; aged 80; died, January 27.

William Bilbro Palmer, Audubon, Texas; University of Nashville, Tenn., 1887; aged 70; died, January 21.

D. Luke Gavin, Shubuta, Miss.; Louisville (Ky.) Medical College, 1898; died in Chicora, Miss., January 31.

Frederick Roderick Dew, Weston, W. Va.; Baltimore Medical College, 1905; aged 40; died, January 31.

Daniel Justin McSweeney, Boston; Harvard University Medical School, 1903; died, about January 20.

Renwick W. Bartley, Marion, Ind.; Loyola University, Chicago, 1880; aged 74; died, January 25.

James T. Croney, Lima, Ohio (license, Ohio, years of practice, 1896); aged 75; died, January 21.

Nicholas J. Hopkins, Dunnville, Ont. (license, Ontario, 1869); aged 77; died, Nov. 7, 1919.

P. W. Logan, Knoxville, Tenn.; Jefferson Medical College, 1861; aged 80; died, January 28.

J. C. Barker, Lebanon, Mo. (license, Missouri, 1884); aged 84; died, January 18.

Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

EUMICTINE

Report of the Council on Pharmacy and Chemistry

The Council has adopted and authorized publication of the report which appears below. This report declares "Eumictine" ineligible for New and Nonofficial Remedies because (1) it conflicts with Rule 10 in that it is unscientific and useless, (2) it conflicts with Rule 6 in that it is sold under unwarranted therapeutic claims, (3) it conflicts with Rule 4 against indirect advertising to the public in that the name "Eumictine" is blown in the bottle for the obvious purpose of bringing the product to the attention of the public when it is prescribed in the original package and (4) because the name is therapeutically suggestive and not in any way descriptive of its composition.

W. A. PUCKNER, Secretary.

Eumictine is a preparation from the laboratory of Maurice Le Prince, Paris, France, and is marketed in this country by George J. Wallau, Inc., New York. It is claimed that the product is "a balsamo-antiseptic preparation composed of Santalol, Salol, and Hexamethylene-Tetramine, in the form of gluten-coated capsules." Nowhere in the advertising are the amounts of the ingredients given. According to the American agent, however, "each capsule is supposed to contain 20 centigrams of Santalol, 5 centigrams of Salol, 5 centigrams of Hexamethylene-Tetramine."

Eumictine is advised "in treating genito-urinary diseases (urethritis, cystitis, prostatitis, pyelitis, etc.)." It is claimed to be "both an antiphlogistic modifying agent, a well-tolerated diuretic" which "may be administered for long periods without ill effects."

The Council declares Eumictine ineligible for New and Nonofficial Remedies because it is exploited in conflict with the following rules:

It is unscientific (Rule 10). Eumictine is composed of hexamethylenamin, salol and santalol in fixed proportions. Hexamethylenamin may serve a useful purpose in some forms of infection of the urinary tract, but neither it nor salol are of any considerable value in gonorrhea. It is now known that the balsamic preparations, formerly so widely used, do not have the curative effects in gonorrhea and associated conditions that used to be ascribed to them. To combine three substances, none of which has any distinct therapeutic value in the conditions for which Eumictine is proposed, does not enhance their value. There is nothing original in the combination used in Eumictine, or in the manner of dispensing it.

It is sold under unwarranted therapeutic claims (Rule 6). These claims are made not only for the components of Eumictine but for the combination itself. Though santalol has certain advantages over the somewhat variable oil of santal and other balsamic resins, it is not true that santalol "does not cause congestion of the renal epithelium" or that it does not "produce exanthema as do copaiba, cubebs, and the ordinary santal oil." It is not true that salol is "devoid of toxicity." Neither is it correct to say that salol "asepticizes and disinfects the bladder, the prostate and the urethra." The claim that hexamethylenamin "is of value when any acute symptoms or tendency to inflammation subsist" is not justified. The claim that hexamethylenamin "renders soluble the uric acid and urates" is also without foundation. The fol-

lowing paragraph is characteristic of the claims made for Eumictine:

"Anti-gonorrhoic by its Santalol, diuretic, urolytic and analgetic by its hexamethylenetetramin (Urotropin) antiseptic and antipyretic by its Salol, Eumictine represents a real therapeutic advance in the scientific treatment of diseases of the urinary passages."

Instead of being "a real therapeutic advance" in the treatment of diseases of the urinary passages, Eumictine presents one of the complex combinations that have long retarded the scientific treatment of these diseases. Eumictine also conflicts with Rules 4 and 8 of the Council.

Correspondence

NEED OF UNIFORMITY IN SHAPE AND SIZE OF PROFESSIONAL REPRINTS AND ADVERTISED OBJECTS

To the Editor:—There should be uniformity in the size, shape and arrangement of printed data that the physician may wish to preserve, conveniently file and promptly refer to. This should include (*a*) reprints of papers and (*b*) advertising data describing objects that deserve preservation and prompt reference.

The object of collectanea is convenience for filing and for reference. I have previously made recommendations to advertisers that they adopt a suitable system whereby descriptive matter, memoranda, etc., could be readily filed. One measure has been extensively adopted, viz., index filing cards of a standard size, 3 by 5, also small, closely printed circulars or descriptive booklets of the same size and containing several pages of outline. The fact is that many physicians now use index filing systems, kept in the drawer of a desk for short case notes, and another for other data. Inquiry and experience teaches me that this custom of filing data is becoming nearly universal, and will become more so in proportion as the material is supplied in filable shape. Meanwhile, all heterogeneous printed stuff in odd sizes and forms is thrown in the scrap, where it deserves to go. Contemplate the millions of money thus wasted. (One comes to doubt gravely the commercial wisdom of many big business bodies.)

Reprints of valuable articles suffer in much the same way. To collect and attempt to arrange them causes suffering, vexation and loss of time to those who wish to preserve and later read them. Surely all editors or managers of medical journals should be as wise, or at least as cooperative, as some manufacturing concerns have now become. This subject is no trifling matter; it is of fundamental significance.

J. MADISON TAYLOR, M.D., Philadelphia.

"VACCINATION WITHOUT SCAR"

To the Editor:—In a recent editorial comment (THE JOURNAL, Jan. 24, 1920, p. 252), reference was made to Major J. R. Goodall's paper on "The Subcutaneous Method of Vaccination," under the caption, "Vaccination Without Scar." The experiment recorded by Goodall in his paper does not give exact information, which is necessary before any conclusions can be drawn. Six thousand individuals were each given, subcutaneously, from one quarter to three quarters of the contents of a capillary tube of vaccine with sufficient water added to make 1 c.c. The local reaction was described as being very similar to that resulting from the injection of typhoid vaccine. The reaction, however, did not appear in the majority of cases till after the second day. This was occasionally delayed till even the tenth day. No reaction was reported in 8 per cent. of the cases. In a few cases the reaction was marked, causing swelling of the elbow, and in some the edema involved the whole arm and hand. Between the seventh and tenth days the local swelling and induration subsided, leaving a hard nodule ill defined, which later became well circumscribed and persisted for about one month. The general symptoms varied in intensity and did not differ from those of ordinary vaccination. No mention, however, is made of different reactions being observed in the cases of men previously vaccinated, which is regretted. An omission which is most vital to the subject was the revaccination of some of those who had received the vaccine by the ordinary method. This would have given evidence as to the immunity produced. Without such further observations, accurate deductions cannot be drawn.

Finally, the wisdom of the subcutaneous injection of vaccine virus which, under ordinary circumstances, contains living bacteria is open to question. The bacterial count of vaccine virus (Hygienic Laboratory standards) may be as high as fifty bacteria per capillary tube. Goodall used from one quarter to three quarters of the contents of the capillary tube, and even if smaller amounts are used, this objection remains.

R. D. DEFRIES, M.D., Toronto.

"HITHERTO UNDESCRIBED DISLOCATION OF THE PATELLA ENDWISE"

To the Editor:—There is nothing new under the sun. In THE JOURNAL, Feb. 7, 1920, p. 388, there appeared under the heading "Hitherto Undescribed Dislocation of the Patella Endwise," a report of a case of horizontal rotation of the patella due to laceration of the quadriceps tendon. Such an injury has not hitherto escaped observation and description, as the author would indicate, but, on the contrary, is described in many textbooks on general surgery and in monographs on fractures and dislocations. Such cases are very rare, but have been known to occur for many years. Reference to this injury will be found in Stewart's "Manual on Surgery," page 316; Wharton and Curtis' "Practice of Surgery," page 598, Keen's "Surgery," Volume II, page 427; Wyeth's "Surgery," page 200; and it is described very fully and reported cases are cited in Stimson's work on "Fractures and Dislocations."

JOHN H. GIBBON, M.D., Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

GOLAY'S MODIFIED WASSERMANN REACTION

To the Editor:—Could you give me information about the simplified serologic test of J. Golay, appearing in THE JOURNAL, Jan. 31, 1920, p. 361. Could you give me the technic?

PAUL SERRE, M.D., Dixmont, Pa.

ANSWER.—Golay's modification of the Wassermann reaction is based on the antihuman hemohemolytic method of Noguchi (THE JOURNAL, April 20, 1918, p. 1157). The antigen is furnished by an alcoholic extract of the liver from congenital syphilis. Complement is obtained from a rabbit immunized by injection of 10 c.c. of a 10 per cent. suspension of human corpuscles in physiologic sodium chlorid solution. The serum is inactivated by heating over a water bath at 56 C. for one hour. The amboceptor is titrated as follows: Into each of a series of tubes are put 1 c.c. of physiologic sodium chlorid solution, two drops of human serum and 0.5 c.c. of a 5 per cent. suspension of blood corpuscles. Progressive doses (one, two, three, etc., drops) of rabbit serum are added to the various tubes. The titer of amboceptor is the smallest quantity that will produce complete hemolysis after incubation over a water bath at 37 C. for one-half hour. The antigen is titrated in the same way by using the requisite quantity of amboceptor as determined in the foregoing. For preparing the suspension of blood corpuscles the defibrinated blood of the patient is washed with physiologic sodium chlorid solution until it is free from serum and the wash water is absolutely clear. The technic of the test is as follows: In the first tube (syphilitic system) are put 1.1 c.c. of physiologic sodium chlorid solution, the requisite drops of antigen, and two drops of the patient's serum; in the

second tube 1.2 c.c. of physiologic sodium chlorid solution and two drops of the patient's serum. The tubes are incubated at 37 C. for one hour. The requisite number of drops of amboceptor and 0.5 c.c. of a 5 per cent. suspension of corpuscles (hemolytic system) are then added to each tube; these are incubated until complete hemolysis of the control. The tubes are centrifuged and the results are read. It is advisable to use two doses of antigen for each test; one the maximum titer, the other dose sensibly less. Three tubes will then be necessary instead of two. The test should be made as soon as possible after obtaining the patient's blood.

THERAPEUTIC VALUE OF DIGITALIS

To the Editor:—Please refer me to the recent literature on the therapeutic value of digitalis as disclosed by recent investigations and tests.

J. A. SPEED, M.D., Durham, N. C.

ANSWER.—The literature contains a vast number of articles pertaining to digitalis; a general discussion of digitalis may be found in such recent works as Frederick Forchheimer's "Therapeusis of Internal Diseases," edited by Frank Billings and E. E. Irons; "A Manual of Pharmacology," by Torald Sollmann, or "Useful Drugs," published by the Council on Pharmacy and Chemistry. The subjoined references are to some of the leading articles of the last ten years:

Hatcher, R. A., and Brody, J. G.: A Biological Standardization of Digitalis, *Am. J. Pharm.*, 1910, p. 360.
Hatcher, R. A.: The Persistence of Action of the Digitalins, *Arch. Int. Med.* **10**: 268 (Sept.) 1912.
Hatcher, R. A.: The Elimination of the Digitalis Bodies, THE JOURNAL, Aug. 9, 1913, p. 386.
Eggleston, Cary: Biologic Standardization of Digitalis Bodies by the Cat Method, *Am. J. Pharm.* **85**: 99 (March) 1913.
Eggleston, Cary: Clinical Observations on the Emetic Action of Digitalis, THE JOURNAL, Sept. 6, 1913, p. 757.
Hatcher, R. A., and Eggleston, Cary: The Stability of the Infusion of Digitalis, THE JOURNAL Nov. 27, 1915, p. 1902.
Roth, G. B.: Standardization of Digitalis, Bull. 102, Hyg. Lab., U. S. P. H. S., p. 5.
Barker, L. F., and Bridgman, E. W.: Extreme Prolongation of Conduction Time in the Bundle of His, an Example Resulting from Digitalis Therapy, THE JOURNAL, March 24, 1917, p. 903.
Rowntree, L. G., and Macht, D. I.: The Standardization of Digitalis and the Potency of American-Grown Digitalis, THE JOURNAL, March 18, 1916, p. 870.
Eggleston, Cary: Influence of Large Doses of Digitalis and Digitoxin on the Blood Pressures in Man. THE JOURNAL, Sept. 22, 1917, p. 951.
Hatcher, R. A.: Digitalis Therapy and the Present Shortage of Drugs, THE JOURNAL, Nov. 3, 1917, p. 1524.
White, S. M., and Morris, R. E.: The Eggleston Method of Administering Digitalis, *Arch. Int. Med.* **21**: 740 (June) 1918.
Pratt, J. H.: Digitalis Therapy, THE JOURNAL, Aug. 24, 1918, p. 618.
Hatcher, R. A., and Eggleston, Cary: Study in Elimination of Certain Digitalis Bodies from Animal Organisms, *J. Pharmacol. & Exper. Therap.* **12**: 405 (March) 1919.
Pratt, J. H., and Morrison, Hizman: The Activity of American Digitalis, THE JOURNAL, Nov. 22, 1919, p. 1606.
Pardee, H. E. B.: Notes on Digitalis Medication, THE JOURNAL, Dec. 13, 1919, p. 1822.
Levine, S. A.: Potency of Some French Digitalis Preparations, *Boston M. & S. J.* **182**: 64 (Jan. 15) 1920.

In addition to the foregoing, two reports by the Council on Pharmacy and Chemistry (THE JOURNAL, Sept. 5, 1914, p. 881, and Dec. 4, 1915, p. 2024) and also a number of short reports and abstracts appearing in the November, 1919, issue of the *Journal of the American Pharmaceutical Association* (pp. 900 to 928) should be consulted.

INTRAVENOUS ADMINISTRATION OF SODIUM SALTS IN COMBINATION

To the Editor:—Can you tell me whether it is safe to give sterile solution of sodium salicylate and sodium iodid intravenously? Is their combination compatible with the blood stream without any special preparation? If it requires special preparation and cannot be made up by the practitioner or ordinary pharmacist, can you inform me of any reputable preparation for use?

W. D. CHASE, M.D., Bethlehem, Pa.

ANSWER.—The danger from the intravenous administration of solutions of sodium salicylate or of sodium iodid are those inherent in the intravenous method of drug administration. Since the effect of salicylates and of iodids may readily be attained by oral administration of sodium salicylate or other salicyl preparations, and of sodium iodid or one of its substitutes, the intravenous administration is rarely, if ever, necessary or warranted. Solutions for intravenous use must be sterile, but pharmacists should have little difficulty in furnishing satisfactory products. The objections to the unnecessary use of the intravenous method of administering drugs were discussed in THE JOURNAL, Nov. 11, 1916, p. 1450. The intravenous administration of salicylates was discussed in THE JOURNAL, Oct. 28, 1916, p. 1319.

"THE NEW DU PONT ETHER"

To the Editor:—Please let me know what information you have about the enclosed clipping.

E. W. CARPENTER, M.D., Greenville, S. C.

To the Editor:—"Cotton Process Ether," manufactured by the Du Pont Co., has been given considerable notoriety in the lay press. A letter of inquiry addressed to the firm elicits the information that "Cotton Process Ether is a very highly refined Di-ethyl Ether charged with Ethylene Gas." . . . What is your opinion of the "Cotton Process Ether"? Has the Council on Pharmacy and Chemistry investigated this product?

JOHN L. ATLEE, M.D., Lancaster, Pa.

To the Editor:—I have been waiting for some reference to the new anesthetic referred to in the enclosed clipping, but if any has been made in the medical press I have failed to notice it. If there is anything of interest in connection with this item, and it is not too much trouble, I will thank you to put me in touch with the situation.

HOLMAN TAYLOR, M.D., Fort Worth, Tex.

ANSWER.—About January 20, the "News Service" of the "E. I. Du Pont De Nemours and Co., Inc.," circularized the press of the country with what it was pleased to term a "good 'filler'"; this particular piece of press agent work dealt with "The New Du Pont Ether." To quote one paragraph from the "News Item":

> The new anesthetic, which is a highly refined di-ethyl ether, modified by the addition of gases, has the following characteristics: (1) the property of inducing and maintaining anesthesia with practical freedom from postoperative nausea, and (2) the property of inducing and maintaining analgesia (conscious insensibility to pain) as distinguished from anesthesia (insensibility to pain plus narcosis).

The Du Pont Ether and the claims made for it are seemingly based on the work of one man, "James H. Cotton, M.A., M.D., Toronto, Canada," who published an article on "Cotton Process Ether and Ether Analgesia," in the *American Journal of Surgery* for April, 1919. However, Cotton did not give the composition of the "new" ether nor, so far as we are aware, has his work been corroborated. In view of the inquiries received, the Secretary of the Council on Pharmacy and Chemistry asked the Du Pont Chemical Works for the composition of the new ether. From the firm's reply we quote one paragraph:

> ". . . The procedures of manufacture, and the exact composition of our ether, we regard as confidential information which we are entitled to retain unless a condition were to arise in which we were unable alone to satisfy the demand for this type of ether."

It has been recognized—and incorporated in the "Principles of Medical Ethics"—that the use of a therapeutic agent of unknown composition is unscientific and contrary to the best interests of the medical profession and the public; but it is many times more serious for a physician to employ a secret or semisecret substance as an anesthetic. A physician using such a semisecret substance would have little defense if the patient should die.

VERONAL (BARBITAL) ADDICTION

To the Editor:—Can you give me information about veronal addiction? I have a patient who is addicted to this drug, but I cannot find much in the literature about veronal addiction and its treatment. He has taken treatment at several hospitals, but they always send him out using his veronal. This case might be interesting to the medical profession, as veronal is being used a great deal by them at present.

A. B. C.

ANSWER.—Constant use of even small doses of barbital (veronal) affects the central nervous system, especially the cerebellum and the vestibular portion of the cochlea. Those taking the drug habitually become much debilitated and seem less able to stand moderate doses. Death has occurred from a 3 gm. dose in addicts, while recoveries are known after a single dose of 10 gm. in others. Fog (*Ugesk. f. Læger* **79**: 370 [March 8] 1917) treated a case of addiction by gradually substituting antipyrin salicylate in the powders which were being taken until the patient was getting no barbital at all. In England barbital and its closely related derivatives have been classed as poisons, and as such are subject to the same regulations that apply to the sale of narcotics.

PELVIC VARICOCELE

To the Editor:—Please give a notation of recent literature on varicose veins of the broad ligament.

W. F. SIHLER, M.D., Devils Lake, N. D.

ANSWER.—The following references are taken from the Quarterly Cumulative Index:

Wall, J. A.: Pelvic Varicocele, *Surg. Gynec. & Obst.* **23**: 62 (July) 1916.
Darnall, W. E.: Varicocele in the Female, *Med. & Surg.* **1**: 624 (Aug.) 1917.
Jewett, W. A.: Pelvic Varicocele, *Am. J. Obst.* **75**: 500 (March) 1917.
Furniss, H. D.: Pelvic Varicocele, *Am. J. Obst.* **75**: 152 (Jan.) 1917.

Book Notices

CONTRIBUTIONS TO MEDICAL AND BIOLOGICAL RESEARCH. Dedicated to Sir William Osler, Bart., M.D., F.R.S., in honor of his seventieth birthday, July 12, 1919, by his pupils and co-workers. Two volumes. Pp. 1268. Paul B. Hoeber, New York. Edition limited to 1,600 copies.

In these two large octavo volumes have been collected essays by some of the numerous pupils and co-workers of the late Sir William Osler. They are issued as a tribute to him on his seventieth birthday. The 142 essays are contributed by 151 writers, including 106 American, 33 English, 10 Canadian and 2 Scotch physicians; they are scientific, historical and literary. As might have been expected of such a large number of articles, there are variations in quality. Some are notable, others unusually good, and some of ordinary character. A few—happily only a few—are not quite worthy of a place in this series. In general, it may be said that the articles on historical, educational and social subjects distinctly surpass in literary quality and general interest those of a scientific or clinical nature. This is perhaps accounted for by the very nature of things, since the research worker or clinician could not produce a special study for this purpose, but must needs report work already done and use something already published, or, perhaps, rewrite for this purpose.

The first volume opens with a frontispiece—a steel engraving of Sir William Osler—an excellent likeness. Following is a beautiful proem by Sir Clifford Allbutt. In an editorial note the committee states the purpose and method of preparation of these volumes. The first twenty-eight essays are by British and Canadian physicians. Mr. Acland, in the first article, describes the Oxford University Museum. The article is well illustrated with especially fine half-tone photographs of the museum, and is a most interesting account of the relation to this museum of some of the predecessors of Sir William Osler in the chair of medicine at Oxford. It is brought out that John Ruskin was in part responsible for the designing of this structure. The second essay is a timely discussion of graduate study in London by Professor Adami, who is well adapted to the task, through his Canadian experience, his experience in the world war, and his intimate knowledge of conditions in America. Following two historical essays are some personal reminiscences of Sir William Osler by Dr. Crozier describing the early life of the great teacher.

A notable essay is that of Sir Auckland Geddes, entitled, "Social Reconstruction in the Medical Profession." Sir Auckland is intimately associated with reconstruction programs in Great Britian and is largely responsible for the establishment of the Ministry of Health. His views, therefore, are of great importance. It is interesting to note that in his opinion "the medical profession in Great Britain, with brilliant exceptions, is in the main composed of men who are immature as citizens, and in quite a separate compartment of their being possess expert technical knowledge, too often on sale to the highest bidder."

As is usual with his writing, Dr. Arthur Keith contributes a notable historical essay on the Hunterian School. Most fascinating is a description by Dr. Macalister, secretary and editor of the Royal Society of Medicine, of an institution which exists in medical Utopia, the Osler Library. This institution, which the author has visited in his dreams, is the medical library *par excellence*. The essay must be read to be appreciated. Librarians will overlook a great opportunity if they fail to adopt some of Dr. Macalister's suggestions.

As is usual also, Sir Humphrey Rolleston contributes a notable essay on Thomas Trotter, physician of the Grand Fleet in 1780. The well known historians, Charles and Dorothea Singer of Oxford, describe a miniature depicting an operation. The miniature is beautifully reproduced in colors.

There follow essays on some seventeenth century writings on the endowment of research, on Galen, Plato and Immortality, and on "Fragment of a Persian Primer." Sir Clifford Allbutt discusses "Innate Heat."

The next essay has the fascinating title, "On the Sizes of Things, or the Importance of Being Rather Small," which develops into a discussion of the coleoptera and the reaction of bacteria on the human organism. A most interesting essay is that of F. Parkes Weber, "Thinking and Dreaming, and the Explanation of Dreams." Those acquainted with his notable book on the "Aspects of Death" will find this essay all that might be expected of the author.

Professor Anders writes on "Myxedema and Cretinism"; Dr. C. C. Bass on "Malaria"; Dr. Norman Bridge has a note on "Pulmonary Streptothricosis" as observed in California; Dr. N. S. Brill of New York writes on "Typhus Fever"; Dr. Thomas Cullen of Baltimore describes a special sign noted in the umbilicus; Dr. Edsall describes poisoning with manganese as it occurs in the industries. All of these essays, as those familiar with medical literature know, concern subjects which have interested their writers for many years and in which they have made notable advances.

The second volume opens with a discussion by Dr. Frank Billings on the "Rehabilitation of the Disabled." Brigadier General Munson has a brief essay on "Military Morale." Dr. C. L. Dana, who acted as editor, contributes an essay, "A Psychotic Episode in Roman History." The late Mortimer Frank has an interesting historical article, and Dr. Fielding Garrison a charming essay entitled, "Physicians' Letters." Very timely is the note by Guy Hinsdale describing epidemics of influenza in 1647, 1789 and 1807 as they were recorded by Noah Webster, Benjamin Rush and Daniel Drake. Particularly interesting is a note by Dr. Henry Hurd on Sir William Osler's relation to the Johns Hopkins Hospital, a note no one would be more fitted to write; and in the same manner, Dr. George M. Kober discusses the influence of Osler on American medicine. Space forbids even a mention of all the articles and authors. One interesting article follows another, promising the reader many valuable hours with these valuable essays; reminding him of the greatest work which any great physician can do, the instruction of students, leading to the production of great thinkers who will follow in his footsteps.

Mechanically, the books are excellent, printer and publisher having done their work well. There are many halftones of artistic and historical merit. The selection of the type, the spacing, paper and binding could hardly have been improved on. The delay in publication, due to the long printer's strike in New York, was unfortunate and unavoidable. It was especially unfortunate because the books in their final form reached Oxford only two days before Sir William's death. These volumes represent a large amount of labor on the part of the committee, which may well take pardonable pride in the results of their efforts.

GUN-SHOT FRACTURES OF THE EXTREMITIES. By Joseph A. Blake, Lieutenant-Colonel, Medical Corps, U. S. A. Paper. Price, 4 francs. Pp. 136, with illustrations. Paris: Masson et Cie, 1918.

While this little book is essentially a work on war surgery it contains much that may prove of value to the surgeon in civil life, particularly with regard to the application of splints, bandages and extension apparatus to compound fractures. Virtually all the material presented has been described and discussed repeatedly in every surgical journal of consequence during the past three years, so that it should be fairly familiar. Nevertheless, those who desire an authoritative summary of the subject will find it here with sufficient details for general guidance.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Mar. 2. Sec., Dr. L. O. Sloan, Juneau.

ARIZONA: Phoenix, April 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

COLORADO: Denver, April 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: New Haven and Hartford, March 9-10. Sec., Reg. Bd., Dr. Robert L. Rowley, Hartford. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec., Eclectic Bd., Dr. James Edwin Hair, 730 State St., Bridgeport.

FLORIDA: Jacksonville, March 16. Sec., Homeo. Bd., Dr. Geo. A. Davis, East Port.

IDAHO: Boise, April 6. Commissioner, Hon. Robert A. Jones, Boise.

ILLINOIS: Chicago, Mar. 1-3. Director, Mr. Francis W. Shepardson, Springfield.

IOWA: Iowa City, March 29-31. Sec., Dr. Guilford H. Sumner, Capitol Building, Des Moines.

MAINE: Portland, March 9-10 Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

MASSACHUSETTS: Boston, March 9-11. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.

MINNESOTA: Minneapolis, April 6-8. Sec., Dr. Thos. McDavitt, Loury Bldg., St. Paul.

MONTANA: Helena, April 6. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NATIONAL BOARD OF MEDICAL EXAMINERS: St. Louis and Chicago, Feb. 18-25. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.

NEW HAMPSHIRE: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.

OKLAHOMA: Oklahoma City, April 13-14. Sec., Dr. J. M. Byrum, Shawnee.

RHODE ISLAND: Providence, April 1-2. Sec., Dr. Byron U. Richards, State House, Providence.

WEST VIRGINIA: Charleston, April 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

GRADUATE MEDICAL EDUCATION

J. M. ANDERS, M.D., LL.D.
PHILADELPHIA

The present position of undergraduate medical education in this country may be said to be satisfactory as the result of systematic efforts at standardization, although the principle that related departments should work together in order that the various problems connected with individual diseases may be viewed at once by the student needs to be more widely applied. On the other hand, graduate training has not been developed to a commendable extent. Before indicating some lines of reform in graduate training, it might be well for me to recite a few fundamental facts which show the vastness of the problem and also the needs of the large number of practitioners and specialists who present themselves for instruction.

THE GENERAL PRACTITIONER AND THE NEEDS OF THE COMMUNITY

The busy physician cannot keep pace with the remarkable and continuous additions to our knowledge of the modern methods of diagnosis and treatment, as well as the prevention of disease and the laboratory technic. Many of those who seek help enjoyed meager opportunities for the study of the basal sciences and clinical training while at a medical college, not to speak of the well known paucity of laboratory facilities. Now the aim and purpose of graduate teaching should be primarily to maintain an adequate medical service, and to accomplish this the needs of the general practitioner must be fully recognized. But though modern movements in the practice of medicine are everywhere evidenced by a tendency toward specialization, the general practitioner has not been displaced. Says Lyon[1] in this connection: "I predict that general practice will endure, will adjust itself to specialism and to group medicine and to public medicine."

Among those vitally interested in postgraduate medical education are some who would restrict training to the higher grade of practitioners and to those who desire instruction in special subjects as well as in the medical specialties. By exacting certain entrance requirements, they would exclude a large contingent of medical practitioners who apply for needed help: they would, in short, practically abandon the so-called polyclinic courses. It seems to me that ways and means should be found to assist all classes of physicians, excepting the so-called hopeless cases. Requirements for acceptance should be waived in the case of those who are in good standing and who merely wish to improve their diagnostic and therapeutic skill by taking an intensive practical course. It has been well said that the general practitioner is the foundation of any medical service, its "first pivot, its anchor, its instrument."

The creation of the Medical Reserve Corps of the army during the recent world war disclosed a not inconsiderable class of physicians who were professionally inefficient; but many of these finally reached the medical training camps after being subjected to a process of filtration. It seems to me that owing to the care and caution exercised by the Surgeon-General to make certain that all medical officers receiving appointment were men of good professional standing and fair attainments they should be admitted to the polyclinic and other courses of our graduate schools without examination or preliminary test of any sort. Munson[2] points out that for many of those not found qualified, special schools and "salvage classes" were organized, and they were thus rendered competent for efficient military duty. The war having taught us the great value of practical and intensive courses in preparation for commissions in the army and navy, it is obvious that brief polyclinic courses (e. g., of four months as the minimum) should hold a definite place, for the present, at least in our graduate schools, so as to qualify the professionally inefficient for civilian service.

One factor which bears specifically on this aspect of the subject is the precept that above the interests of the medical school for graduates stand the interests of the general public. These interests may not be ignored in planning the scope and curriculums of our postgraduate institutions. There was a time, easily recollected by the majority of the present generation of physicians, when in our undergraduate schools, the courses in pathologic anatomy, including the performance of necropsies, in microscopy, physical diagnosis, laboratory methods, in bedside clinical training and other branches were on a scale far from commensurate with their importance. The men and women who were graduated under the old order of things, and the same may be said of all who have been engaged in general practice for a few years even, cannot, as stated above, keep abreast with the more recent and continuous advances of enormous significance to the communities in which they carry on their professional work. Shall these general practitioners be denied an opportunitty to acquire modern methods which will enable them to diagnose and attack disease with greater assurance of success? Is it not reasonable to assume that it is the duty of graduate schools to make provision for the immediate needs of the public and of practicing physicians who recognize and seek to remove their deficiencies, the while indulging the hope that one day this demand will be less insistent or may cease to exist altogether?

There is another and hopeful phase of the situation to be observed in the present-day recognition of the importance of correlating the teaching of the basal sciences with the more strictly practical branches of medicine. Many of the

1. Lyon, L. P.: Graduate Education in the Clinical Branches, and the Minnesota Experiment. J. A. M. A. **69**: 1307 (Oct. 20) 1917.

2. Munson, E. L.: The Needs of Medical Education as Revealed by the War, J. A. M. A. **72**: 1050 (April 12) 1919.

difficulties and much of the confusion experienced by the undergraduate student will disappear, once he clearly appreciates the relationship that the various scientific subjects bear to one another and to clinical medicine.

The same precept applies with equal force to postgraduate teaching; and in order to accomplish a satisfactory correlation of the different branches it is necessary to have an organization based on a comprehensive knowledge of the practical interrelations of the branches represented in the curriculum. Such a scheme of coordination of the instruction is possible only with physicians who have given the subject of the arrangement of the graduate school curriculum careful and thorough study. Moreover, cooperation between the heads of the different departments and the deans of the various schools is essential to the end that appropriate teamwork may be effected. It is in line with the need of meeting this requirement of the graduate student that a most important reform is possible; but obviously it will demand time and serious thought to bring it about.

Doubtless, the further development of an adequate scheme of graduate medical education in this country will be in large part the result of the efforts of the American Medical Association. As in the case of undergraduate education, so in that of graduate training, the recommendations of special committees of this body, with the object of standardizing instruction, will be generally accepted. It may be reasonably assumed that candidates will be subjected to a process of elimination; but it is hoped and believed that this sifting will not exclude the medical graduates who compose the backbone of the profession and whose deficiencies are, in many cases at least, attributable to low standards of the medical schools from which they were graduated.

There should be brief, intensive courses, then, for the average general practitioner; they are an effective help in his work, and at the same time meet in a measure at least the needs of the community. Indeed, this educational movement is so largely associated with the vital interests of the public that further comment regarding the duties and responsibilities of graduate schools in the matter would seem to be unnecessary. Surely, graduate medical schools should not wait until the people in general are so organized and enlightened that they can adequately express their professional needs. For these brief group courses no official certificate should be granted, although a statement issued by the dean setting forth that the candidate had taken certain polyclinic courses, with a mention of the duration of the period of study would be allowable.

THE SPECIALTIES

The world war revealed the scarcity of physicians who were qualified to render service along technical or "highly specialized lines." While there was an unprecedented demand for physicians of the highest attainments during that period, the experiences gained served to emphasize the necessity for improvement in both undergraduate and graduate medical education, so as to procure and maintain an adequate expert medical service.

It follows as a natural corollary from the foregoing statements that one of the chief functions of the graduate school is to provide an opportunity for the preparation of physicians for service requiring exceptional qualifications and the highest skill, as specialists, teachers and research workers. To those desiring to pursue the advanced courses, however, a strict psychologic rating should be applied; and all who fail to show the proper mental aptitude should be rejected. These entrance examinations are to be conducted by a competent specialist in neurology or psychology in conjunction with the dean.

I feel strongly that the time has arrived when we must free ourselves, by degrees if need be, from the custom of including among polyclinic courses, strictly speaking, the recognized medical specialties. They should fall either into the higher courses or into those leading to degrees, or the purely personal ones with a view to attaining to greater technical and practical efficiency along special lines and to become impregnated with the environmental atmosphere of a given teacher. To requests for personal tuition either in general medicine or surgery or the specialties, graduate schools must ever give heed; but the instruction should be conducted quite independently of any or all group courses, and no degrees should be granted.

The adoption of advanced courses to prepare men for the specialties in medicine would be a distinct and long step in advance, and a commendable asset in the movement to eradicate incompetents. This object, the standardization of the specialties, will not be attained so long as one or more brief polyclinic courses give physicians the right to assume the rôle of a specialist. For example, modern operations are on the whole comparatively safe; but far greater credit would accrue to the medical profession if the so-called leading operations in all departments of medicine requiring surgical procedures were performed only by the thoroughly trained, skilled and experienced surgeon.

The organization and standardization of advanced courses necessitate an immediate division of internal medicine and general surgery into several subbranches or specialties. Further details with regard to these two subjects would be beside the scope and purpose of this article, although it may be added that each subdivision should be provided with a full-time head, and that graduate schools require a large personnel of well-trained and experienced teachers. The progress of the science and art of medicine has been, doubtless, retarded by lack of preparedness on the part of physicians who have been pursuing special limited fields of civilian practice. More rigid training after the proper scientific preparation and certification for specialists is a most pressing public need and should engage the attention of our newly organized graduate medical schools. Both entrance requirements and curriculums would naturally differ in different medical specialties, but they must without exception be conducted under the higher scientific and practical standards.

METHODS OF TEACHING

It is in the graduate schools of this country that the cooperative or group method of studying disease, which is to be commended, must be properly rooted and developed. It is time that a satisfactory start be made in the higher courses leading to degrees, which should be a guarantee of exceptional attainments in preparation for the conduct of professional chairs or the practice of one of the recognized specialties, or for public health work; indeed, this should be undertaken as soon as proper facilities can be offered.

It is generally conceded that original research is to be encouraged by graduate rather than undergraduate schools; it can have no definite place in the curriculum of the latter because of two significant facts: first, lack of time to pursue original investigation successfully, and second, lack of qualifications to carry on such difficult and exacting work with promise of important and reliable results.

The custom of conducting group courses has its well-marked limitations. While it is feasible to give theoretical training (lectures, demonstrations and the like) to groups or classes of students, the practical work, which should make up the bulk of the course, should be in great part at least by individual contact of the student with patients and apparatus under supervisory instruction. In operative tech-

nic a student assistantship affords an excellent opportunity to gain practical information; the same remark applies to the student of internal medicine. The method of individual touch with apparatus and patients is indispensably necessary in the more advanced courses for which special degrees are offered. It will be seen that an abundance of clinical material and laboratory equipment is a prime requisite for carrying on such training. Its successful consummation, therefore, demands a large corps of competent teachers, and the affiliation with universities of all available hospitals, clinics, laboratories and museums. Such an affiliation of hospitals and clinics with universities, however, should be effected slowly and systematically. Indeed, the process should never be more rapid than is consistent with thorough organization and efficient, systematic teaching. The length of degree courses should not be less than from two to three semester years.

The chief primary aim and purpose of graduate schools being to provide highly skilled specialists, teachers and research workers, so far as they accomplish these ends will they become a potent factor in the era of production and construction on which America has recently entered. To promote a scheme such as outlined, however, an ample endowment fund is absolutely essential. Not only are new hospitals and laboratories required, but also endowed chairs. We are passing through a period in which "drives" have become popular and surprisingly successful. It has been authoritatively stated that the need of funds was never greater at our universities than at present, owing to plans looking to new developments in connection with the graduate medical schools and in other lines of endeavor. Since time is the essence of such an undertaking, it is hoped that "drives" will be made in the immediate future by the alumni and friends of the great American universities which have failed to do so in the past. It should be recollected in this connection that institutions which have received grants from the General Education Board have been those which have themselves contributed a certain amount. I am decidedly of the opinion that once the public, more especially the benevolently inclined portion, thoroughly understands what is the goal of these schools and that the welfare of the community is first, financial aid can be obtained through private philanthropy and from the state as well.

Much pertaining to both comprehensive planning and execution of the public demands in regard to medical service must obviously be left to the future. Meanwhile, all who are identified with the control and direction of graduate education should be intensely occupied with endeavors to meet the new and ever changing conditions of the times. This will necessitate the institution of new policies and methods which must be given proper direction, after the most thorough consideration of their wisdom. As the work progresses there must also be maintained close intercourse between the policy forming management, the deans and the faculties, if a real merit system of graduate medical education is to be expected.

FUNCTIONS OF THE GRADUATE SCHOOL

To recapitulate, the fully functioning graduate school should provide:

1. Polyclinic courses preferably of from four to eight months' duration for those pursuing general practice, who are desirous of overcoming their unavoidable deficiencies.

2. Advanced courses in the different departments of internal medicine, surgery and in the medical specialties for which degrees are offered, properly standardized and from two to three years' duration with an adequate standard of acceptance and an examination at the close of each scholastic year.

3. Personal courses under special arrangements with individual teachers, quite independently of any class or group instruction.

4. An abundance of material and laboratory space and equipment resulting in part from a gradual and careful affiliation of hospitals and clinics with universities, and a large corps of teachers with sharp division of duties and fixed responsibilities, including full-time professors as heads of departments in the advanced courses, with proper emoluments of their services.

5. A research bureau with separate organization to which the other departments defined above would naturally contribute candidates, subject to certain acceptance standards.

6. Large endowments to meet the conditions of the times; this is fundamental to all success. The people—the benefactors—must be fully informed of the purpose and aims of this modern educational product, as an aid to the securing of private and corporate endowment.

1605 Walnut Street.

Idaho October Examination

Mr. Paul Davis, director, Bureau of License, Idaho Department of Law Enforcement, reports the written examination held at Boise, Oct. 7-9, 1919. The examination covered 13 subjects and included 130 questions. An average of 75 per cent. was required to pass. Twenty candidates were examined, all of whom passed. Six candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University		(1915)	82.3
Chicago College of Medicine and Surgery		(1917)	83.2
Hahnemann Medical College and Hospital of Chicago		(1913)	86.3
Northwestern University		(1904) 83.8, (1907)	78
Rush Medical College		(1917)	81.2
University of Illinois		(1919)	85.3
State University of Iowa College of Medicine		(1903)	85.5
University of Kansas		(1917)	82.8
University of Maryland		(1915) 83.3, (1918)	83.2
Boston University		(1905)	89.7
Marion-Sims College of Medicine		(1896)	88.6
St. Louis University		(1906)	87
John A. Creighton Medical College		(1911)	80
University of Pennsylvania		(1917) 81.8, (1919)	80.5
Hahnemann Medical College and Hosp. of Philadelphia		(1907)	89.4
University of Tennessee		(1919)	87.4
McGill University		(1919)	83.3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Denver College of Medicine		(1894)	Utah
University of Colorado		(1917)	Colorado
Chicago College of Medicine and Surgery		(1910)	Utah
Rush Medical College		(1910)	Utah
St. Louis University		(1905)	Utah
Jefferson Medical College		(1897)	Washington

Montana October Examination

Dr. S. A. Cooney, secretary of the Montana State Board of Medical Examiners, reports the written examination held at Helena, Oct. 7-9, 1919. The examination covered 10 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 23 candidates examined, 14 passed and 9 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago Coll. of Med. and Surgery	(1915) 76.1,	(1917)	81.8
Northwestern University		(1909)	80.9
Rush Medical College	(1915) 82.8, (1919) 79.7, 83.3,		*85.4
State University of Iowa College of Medicine		(1897)	84
Univ. of Minnesota Coll. of Homeo. Med. and Surg.		(1897)	80.5
University of Minnesota Coll. of Med. and Surg.		(1907)	78.9
Long Island College Hospital		(1914)	82
University of Oregon		(1917)	76.9
Willamette University		(1913)	75.2
Jefferson Medical College		(1910)	76
	FAILED		
Loyola University	(1916) 56.4,	(1917)	62.6
Barnes Medical College		(1909)	47
Kansas City Hahnemann Medical College		(1905)	59.5
St. Louis College of Physicians and Surgeons		(1909)	70.3
St. Louis University		(1913)	63.9
John A. Creighton Medical College		(1917)	66.9
University of Oregon		(1919)	68.7
Memphis Hospital Medical College		(1911)	62.7

* Received certificate for four years' work, August, 1919.

Social Medicine and Medical Economics

THE DISPENSARY SITUATION IN NEW YORK CITY

Summary and Recommendations

BY THE PUBLIC HEALTH COMMITTEE OF THE NEW YORK ACADEMY OF MEDICINE *

The Public Health Committee of the Academy of Medicine was organized, May 1, 1911. Its main purposes have been:

1. To maintain a bureau for the collection of facts in regard to public health, sanitation and hygiene.
2. To endeavor to establish an active cooperation with all public health activities in the city.
3. To keep the medical profession advised of current public health conditions.
4. To render to the public authorities and to the community at large an authoritative medical opinion on public health matters.
5. To undertake and suggest special researches looking to the solution of vital public health problems.
6. To make comparative studies of methods and results of public health activities in other cities, both in this country and abroad.
7. To utilize facts obtained by the study of public health and hospital conditions for practical application in the preparation of the annual municipal budget.
8. To assist actively the various departments of the city government which relate to public health and hospitals in the preparation of their tentative budgets.
9. To study the hospital and dispensary situation in the city with a view of making plans for their future development and in order to further the efforts for raising the standards of efficiency.

From the time of its organization the committee has carried out its program faithfully, as demonstrated in the annual summaries of its work. The sphere of action and influence of the committee has been widened from year to year, and it now occupies an important place in the public health affairs of New York. Two of the studies of the committee have already been published in THE JOURNAL.[1]

I. CLINIC FACILITIES IN NEW YORK

According to the report of the state board of charities there are 153 dispensaries in New York City. In this number are included twenty-one tuberculosis, eight dental, ten eye and three rabies clinics of the department of health, and six school dental clinics maintained by the Children's Aid Society. Of the 105 dispensaries outside of the health department and school dental clinics, there are sixty-five outpatient departments of hospitals, thirty-four detached dispensaries and six college dispensaries. In addition, the health department maintains twelve venereal disease clinics (all but two advisory only), three occupational clinics and sixty baby health stations. Several private agencies maintain an additional number of milk stations.

The average number of persons treated annually in the dispensaries of the city has been one and a quarter million for the last five years, and the average number of treatments given is about four million, making an average of over three treatments per patient.

Over 2,000 physicians in New York City are giving their services to dispensaries, and in the vast majority of instances their services are not compensated. Approximately 69 per cent. of the physicians are associated with outpatient departments of hospitals, and the remainder, or about 31 per cent., work in the independent dispensaries. The dispensaries are open weekly for about 8,000 clinic hours. Most of the dispensaries are open during morning and early afternoon hours. The number of dispensaries open in the late afternoon hours is very small, and the total number of evening hours during which the clinics function is only 213½, or a little over 2.5 per cent. of the total number of clinic hours per week.

There is evidently a sufficiency of dispensary facilities in New York City, and there will be no need for additional dispensaries for some years to come if the existing facilities can be utilized to a larger extent, and if, with a system of paying salaries to physicians, the dispensary hours can be arranged to meet in a larger degree the demand of those who are employed, and of the schoolchildren.

Of late the dispensaries have taken on functions along the lines of preventive medicine and public health, but this development is still in its infancy. The great opportunities of the dispensaries in the fields of both curative and preventive medicine have not as yet been fully grasped by the institutions, nor have their social responsibilities been clearly realized.

II. THE DISPENSARY LAW

According to the state law of New York, all persons applying for advice or treatment at a dispensary must be questioned as to their ability to pay a physician, and only those who are, in the opinion of the registrar, unable to pay physicians or dentists, shall be accorded treatment. Exceptions to the rule are permitted in emergency cases and cases of communicable disease (this refers chiefly to tuberculosis and venereal diseases), and in the case of persons applying at dispensaries connected with medical schools which may be "selected for use in clinical instruction." It is a misdemeanor to obtain medical or surgical treatment on false representation. The questioning concerning the financial status of dispensary applicants required by law is more or less perfunctorily performed; and although the law has been on the statute books for twenty years, not a single case has been brought to court.

Studies made at various times in several cities, including New York, show that the amount of imposition on the practically free services of dispensaries is not flagrant and does not constitute an important factor in the dispensary problem. The study conducted by a special committee of the New York County Medical Society in 1912[2] led to the conclusion that 10 per cent. of the patients seemed "able to pay for medical treatment under ordinary circumstances, but the margin over and above fixed expenditures seemed in most cases so slight that in illness demanding continued treatment or the services of a specialist, to pay a physician would mean for them serious deprivation or the incurring of debt from which afterward it would be difficult to escape."

A study of 1,000 cases at the Presbyterian Hospital Dispensary in Philadelphia showed that in 2 per cent. of the cases the acceptance of free care offered by the hospital amounted to abuse.[3]

The Illinois State Health Insurance Commission reported in May, 1919, that according to its study 4.5 per cent. of the dispensary patients "were recipients of medical charity which their economic status did not justiy."[4]

Similar studies at the Boston Dispensary and at the Washington University Dispensary at St. Louis led to the conclusion that 2 per cent. of the patients were taking undue advantage of the free services of the dispensary physicians.[5]

Our own study, based on first hand information obtained from the patients who were visited in their homes, corroborates the findings of the other investigations. We found that 2.2

* The members of the committee are E. H. Lewinski Corwin, Ph.D., executive secretary; Dr. Charles Loomis Dana, chairman; Dr. James Alexander Miller, secretary, and Drs. John S. Billings, Nathan E. Brill, Robert J. Carlisle, James B. Clemens, Haven Emerson, Lewis Fox Frissell, Arpad G. Gerster, S. S. Goldwater, John A. Hartwell, Ward A. Holden, L. Emmett Holt, Otto V. Huffman, Walter B. James, Walter L. Niles, Bernard Sachs, Thomas W. Salmon, Frederic E. Sondern, M. Allen Starr, W. Gilman Thompson, Philip Van Ingen, Karl M. Vogel, George B. Wallace, Cassius H. Watson and Herbert B. Wilcox.

1. Quarantine in the Maritime Cities of the United States, J. A. M. A. **60**: 194 (Jan. 18) 1913; Report on Postmortem Examinations in the United States, ibid. **60**: 1784 (June 7) 1913.

2. New York State J. Med. **13**: 50 (Jan.) 1913.

3. Jobes and Hostetter: A Social Survey of Dispensary Patients in Philadelphia, Mod. Hosp., November, 1915, pp. 321-326.

4. Report of Health Insurance Commission of the State of Illinois, May 1, 1919, pp. 93, 355.

5. Davis and Warner: Dispensaries, New York, 1918.

per cent. of the patients were palpably taking undue advantage of the dispensaries, that 79.4 per cent. were justified in the use of the dispensaries because of low economic status, and the rest because they sought the services of specialists or the use of equipment and apparatus which could not be obtained anywhere except in a dispensary at a price which they could afford to pay.

The bulk of dispensary work today is done in departments devoted to the treatment of special conditions. Not more than 20 per cent. of treatment is given in the department of internal medicine; the remainder is divided among pediatrics, surgery and specialties. The vast majority of patients seek the advice of specialists in the dispensary because they cannot meet the fees prevailing in private practice.

In view of that condition, it may be stated that the dispensaries have ceased to be institutions for the destitute only, and have come to occupy a very prominent place in the treatment of disease among the wage-earners of the community.

III. DISPENSARY POLICY AND EXECUTIVE DIRECTION

There exists no standard method of dispensary organization, either from the administrative or medical point of view. The dispensary has too often been treated as a Cinderella in the hospital household—neither sufficient funds nor sufficient thought have been given to its organization and work.

The problems encountered in dispensary administration are probably more complex and difficult than are the problems arising in the management of a hospital, yet the majority of institutions lack a definite policy with regard to dispensary work, and the administrative supervision is in too many institutions purely perfunctory. Likewise, with the exception of independent dispensaries, there seldom is an executive officer of training and ability attached to the dispensary whose duty it is to give undivided attention to the study of its problems and the development of adequate administrative procedure.

There is a need in most of the institutions of a clearly defined policy and responsibility to be formulated by the board of trustees and to be supervised by a joint committee representing the board of trustees, as well as the medical board. Provision should also be made, at least in the large institutions, for a full-time executive, who will carry out the policies of the board of trustees and devote his undivided thought and attention to the administrative problems of the dispensary. Many of the existing administrative deficiencies would be obviated by the existence of well defined policies and by the fixing of responsibility for their enforcement on specially designated full-time executives.

IV. FEES

The prevailing charge for admission, drugs, dressings, apparatus and so on varies from institution to institution. No effort has been made to standardize charges. They are invariably very low, although in some institutions the registration fee is as high as one dollar. Municipal hospitals have thus far refrained from charging any fees in their outpatient departments, although payments are accepted in such hospitals for the maintenance of ward patients. During the last year the charges in many institutions have been slightly increased. The increase in charges leads at times to a falling off of the number of patients, who seek treatment in institutions where the charges are lower. There is an evident need of an equalization policy in the matter of charges for treatment, as well as for medicine, dressings, etc., and an attempt along these lines should be made jointly by all the institutions, including the municipal.

At least three considerations must be borne in mind when the problem of fixing dispensary charges is undertaken. First, all the institutions are in need of additional income for the purpose of improving the services; second, the majority of the wage-earners are able to pay part of the cost for skilled medical service, and third, there exists a class of patients, chronic invalids and the unemployed, who will be deprived of treatment altogether if the admission fee is demanded in every case. The fees should likewise be low or remitted to patients in tuberculosis and other similar clinics to which the patients are required to come for sanitary supervision. It is therefore necessary to adopt a system of carefully graded fees with a maximum not to exceed 50 cents, and to make that system uniform in the dispensaries throughout the city. The wage-earners in a more or less steady employment could pay a fee of 50 cents per visit without hardship. Moreover, considering the fact that the majority of patients come to the dispensary to seek the advice of specialists, the suggested increased fees would not be considered prohibitory to most of them. They are at present compelled to resort to the practically free services of the dispensary because they cannot meet the customary charges of specialists. The adoption of a 50 cent maximum fee would materially increase the present dispensary income, and would aid toward making possible the necessary improvements in dispensary service. It would help the institutions to pay salaries to physicians and to employ larger clerical, nursing and social service staffs to carry on more adequately the manifold functions of the dispensary and to meet the responsibilities toward the patients and the community. Even small salaries of from $300 to $600 yearly are often sufficient to keep good young physicians interested in their positions, and to lessen the medical "turn over" in the clinics.

The institutions which are poorly equipped, and which would be unable to render a superior grade of service, would lose many of their patients who, on paying a higher fee, would be more discriminating, and in this way the inferior institutions would be gradually eliminated.

V. REDUCTION IN WAITING TIME

The two things that first need amelioration in clinic procedure are the reduction in the waiting time before admission and the method of assignment of patients to clinics. In many instances, patients are made to wait unduly long periods of time, which is a hardship for most of them if they are employed, or, as in the case of mothers, if they have domestic duties. It is believed that this could be obviated to a large extent by the system of appointments, as is customary in private practice. That such a system can be made practical has been demonstrated by the American Red Cross Clinic for Children at LaHavre, and at the Mayo Clinic at Rochester, Minn.[6]

Because the dispensary plant is in many instances used only for several hours during the day, there is a great overcrowding of patients at most of the institutions. More extended use of the dispensary facilities would obviate the existing overcrowding in many instances and would allow for better individual attention than is at present accorded the average patient. When the extension of the use of the plant is impracticable, the principle of limitation of numbers should be applied, that is, no more patients should be admitted to the dispensary than the facilities of the institution in personnel and equipment would warrant.

The present practice of the lay registrars assigning patients to the several departments of the dispensary results in numerous transfers from one clinic to another, with the concomitant loss of time, and also in the condition that many clinics treat cases which do not belong to them.

6. The Red Cross plan is described by Dr. Edwards A. Park: Mod. Hosp. **13**: 101 (Aug.) 1919.

VI. THE DIAGNOSTIC CLINIC

To remedy this, it is suggested that each dispensary should have a diagnostic division, and patients with systemic diseases or suffering from conditions not easily ascertainable should receive the benefit of an examination by a group of physicians representing the several departments of the dispensary, and be assigned to the treatment departments after a preliminary examination has been made. Conditions in which the diagnosis is obvious, such as simple wounds or fractures, or when the disease or complaint is trivial and transient, such as a common "cold," could be disposed of without assignment to the diagnostic clinic.

Patients in need of a general examination should be assigned to the diagnostic division and subsequently sent for treatment to other departments. The physicians in the several departments would serve in the diagnostic division on a rotation basis. In this way the patients would receive the benefit that accrues from medical team work, and the physicians would have a much better opportunity for a complete study of patients than they do under the present form of organization. Consultants of broad experience and of recognized ability should be associated with and should actively participate in the work of both the diagnostic and the therapeutic departments.

VII. EDUCATIONAL OPPORTUNITIES

The waiting period of the patients has not been utilized in any of our dispensaries for educational purposes. Even if a system of appointments is introduced, it will not entirely obviate waiting. This period could be well utilized if moving pictures, dealing with certain health aspects, could be shown, large posters placed in the dispensary rooms, so that they could be read from the distance, or other methods of health education employed. Dietetic demonstrations would be of great value in this connection. The dispensary might also be used outside clinic hours for lectures, classes in dietetics, corrective gymnastics, teaching of hygiene, and similar activities; in other words, the dispensary should strive to become the educational center of the neighborhood.

VIII. ROOM ARRANGEMENT

It is important that in many of the institutions better arrangement of the facilities should be made so that the clinic rooms would be well lighted and ventilated and that the laboratories would be housed in readily accessible locations, and that clinics closely related in function should be in juxtaposition. The arrangement of the waiting rooms in large clinics could also be improved, and when feasible the exit from the building should be separated from the entrance. The social service department should likewise be made easily accessible and located in immediate proximity to the diagnostic department, which would facilitate the joint work of the two departments.

IX. EQUIPMENT

In order to make the services in dispensaries as attractive as possible for physicians, and in order that the patients may derive the greatest benefit from medical skill, it is imperative that the dispensaries be equipped with all the modern facilities for diagnosis and treatment of disease. Many institutions have meager laboratory and roentgen-ray facilities. The hospital laboratories on which many of the outpatient departments have to depend are too overcrowded with work for hospital patients to assume all the burden that proper medical work in the dispensaries would impose on them. In addition to the lack of adequate laboratory equipment, the dispensaries are seldom equipped with therapeutic workshops and with the facilities for hydrotherapy, mechanotherapy, thermotherapy and electrotherapy.

X. REMUNERATION OF DISPENSARY PHYSICIANS

Even if all the necessary physical facilities were provided in the dispensary, it would not attract physicians for continued and sustained application if there were no other benefits derived from dispensary practice. Medical ethics restrains physicians from deflecting patients from the dispenasry to their private offices, and particularly with the present high cost of living it is very difficult for many to devote a great deal of time to dispensary practice, which, with a few exceptions, is not compensated. Remuneration, even though nominal, affords a stimulus to more conscientious performance of work, and makes possible a better discipline in the institutions. But what is even more important for the efficiency of the service is a medical organization correlating the dispensary service with that of the hospital, such as is already in vogue in the best institutions and should be adopted by others. The essential features of a correlated dispensary and hospital service are herewith suggested.

XI. CORRELATION OF DISPENSARY AND HOSPITAL SERVICE

The medical organization of outpatient departments which are connected with hospitals should be divided into two main branches corresponding to those of the hospital, namely, the medical and the surgical. The medical division of the hospital and that of the dispensary should be under one director. Likewise, the two surgical departments should have common direction. The specialties in each branch should be differentiated in accordance with the best interests of the medical and administrative organization of each institution. The outpatient service should be graded. The appointment to the lowest grade in the outpatient department should be made on a probationary basis of three or six months, and after a successful trial the probationer should, on the recommendation of the chief of clinic and with the approval of the board of trustees, be appointed a member of the dispensary staff in the lowest grade. On completion of a period of satisfactory service he should be promoted to a higher grade, and whenever the conditions warrant, should be made a member of the lowest grade of the visiting staff of the hospital. A rotating service for the junior members of the visiting staff of the hospital, allowing a combined service in the dispensary and in the hospital, is beneficial to hospital and dispensary alike.

Whenever such an arrangement exists, it affords physicians a stimulus to enter dispensary service; it adds to the experience of physicians, many of whom, on account of the limited facilities of hospitals, do not get the benefit of hospital association except during the one or two years of internship, and it gives to the hospitals a broader opportunity of choice of the visiting staff. A universal adoption of such a plan would be welcomed by the profession, and it would obviate to some degree, perhaps, the necessity for paying salaries to dispensary physicians. The opportunity for promotion to hospital rank counts for more than a salary reward for a routine day-to-day drudgery without hope for promotion. Such a plan would also dovetail with a medical school organization.

In detached or independent dispensaries, where such a plan of organization could not be effected, arrangements with medical schools for organizing graduate instruction could perhaps be made in order that the whole field of clinic work of this city should be permeated with the spirit of research and teaching, and in order that all existing facilities should be put to the most useful purpose.

The study of medical records has revealed the fact that the special institutions devoted to the treatment of particular conditions are almost invariably superior in their work to the corresponding branches of the general dispensaries. It seems important, therefore, that in making plans for the development of New York as a great medical teaching and research

center the facilities and clinical material of the special institutions should be correlated and utilized to the fullest extent.

XII. MEDICAL RECORDS

Adequate medical records prepared in a certain standard way and legibly written are one of the prime essentials of conscientious performance of work and of a scientific utilization of the clinic material. Under existing conditions, in which the physicians in the majority of instances are required to write histories in the rush of clinic work, and where there is no supervision over the keeping of histories, and no scientific or administrative stimulus for keeping them, the medical histories in many instances are little more than worthless. Often the essential findings of the physical examination and the ancillary laboratory tests, or the character and method of treatment, are not recorded.

The analysis of the thousands of medical records obtained from a large number of institutions, although inadequate as an exact portrayal of medical work, indicates, however, that in many instances dispensary work is of a slipshod character.

General physical examinations were found to be recorded in less than one fifth of all the cases examined. For certain conditions, such a procedure is probably unnecessary. In many others, however, the failure to make an adequate general physical examination is a serious omission and indicates to what extent the dispensaries could be improved if their responsibilities as agencies for the prevention of incipient disease and the discovery of remedial defects were fully realized. Then, again, the fact that the number of diagnoses recorded on the medical histories exceeds the number of physical or local examinations and the number of laboratory tests would indicate that the diagnoses are often forced without sufficient warrant. Even in such cases diagnosed as nephritis, for instance, records indicate that urinalysis was made in only 66.7 per cent. of instances. Among the cases of syphilis studied, in only 50 per cent. was an indication found that the patient had been given proper treatment.

For the efficient functioning of the clinics, it is desirable that clinic staff conferences should be held regularly and cases reviewed. The members of the staff should be urged to study intensively certain series of records and make analyses of them for presentation, discussion and publication.

With an administrative organization, as outlined in this series of recommendations, the keeping of adequate histories is quite feasible. In order that the histories may be made readily available for all purposes for which they may serve and in order that they may be kept in a uniform way, it is essential for a dispensary to maintain a central cross index filing system, such as has been successfully maintained at the Presbyterian Hospital of New York or at the Massachusetts General Hospital or at the Mayo Clinic, for example. The daily routine procedure in dispensaries should provide that at the close of each clinic session the clinic secretary should turn in the day's records to the filing clerk, who, on examination, files them in accordance with an established system, if the records contain all the information called for by the standard adopted. If the records are incomplete they should be returned to the physician for the supplementary information before they are placed on file. Before the clinic session begins, the records pertaining to patients who are expected to return on that particular day would be obtained by the clinic secretary from the filing clerk. Additional items indicating the patient's progress would be added, and the records again returned to the central file.

Although theoretically the central file is highly to be recommended for its manifold advantages, it has certain practical drawbacks. First of all, it is expensive, as it requires a considerable staff of trained and experienced file clerks with a thorough understanding of medical terms. Its proper functioning is also dependent on the existence of clinic secretaries who would cooperate with the filing department in seeing that all the details are entered and that the department is notified daily in time to prepare histories for each clinic session.

Furthermore, the frequency of error in misfiling a record increases with the number of records handled, and accordingly the chances of a temporary loss of record are greater in the central files than they are in the individual files. Likewise, the question of available space for a central file must be considered before its adoption. A central file usually occupies a considerable amount of contiguous room space, while the decentralized file is easily distributed among the several clinic rooms.

Finally, the adaptability of a central file to the requirements of certain clinics, such as tuberculosis and venereal disease, which are called on to make periodic summaries of their work, must also be considered.

XIII. CLINIC SECRETARIES

Another important factor in increasing the efficiency of the clinic is the dispatch with which patients are prepared for examination. There are few institutions in this city at which clinic secretaries, as they are called, are employed. Wherever the experiment has been tried, whether with paid or volunteer workers, it has proved to be of great value. It is very important that clinic secretaries be generally employed as adjuncts in the discharge of clinical procedure. Many volunteers could be secured for the service from among those in the schools for social service, for whom such an experience would be of invaluable assistance in their future careers. A certain number of paid secretaries will, under any conditions be necessary in the clinic in order to train volunteers and facilitate the work of the physicians, and to spare the patients a great deal of waste of time and effort and also their occasional disappointment and discouragement.

XIV. FOLLOW-UP SERVICE

One of the tests of a dispensary's efficiency is the hold it exercises over its patients, for unless patients return for treatment until discharged, a great deal of the effort and money expended has been lost. As matters stand, the return visits in some of the departments of the clinics are very few. In certain departments, like tuberculosis, venereal disease and children's, efforts are being made to bring the patient back through the follow-up system, which in the majority of institutions consists in notifying patients who fail to come on an appointed day that they should return to the clinic. Only in certain institutions are the patients visited by the agents of the dispensary and urged to come back. There are many reasons for the failure of the patients to return. They sometimes get discouraged; frequently, again, the symptoms which in the first instance drove them to the dispensary disappear, and it is not evident to them that they should continue treatment. In this study it has been shown that the majority of the patients gave "pain" as the chief symptom which prompted them to seek medical advice. It is essential for an efficient clinic to have an adequate number of workers who would be able to impress the patients with the importance of continuing treatment, even when the distressing or annoying symptoms disappear.

The number of persons with syphilis or gonorrhea who remain under treatment until discharged by the clinic is almost negligible, and no systematic efforts have been attempted to examine the families of the infected patients. In this respect the experience of tuberculosis clinics, where efforts in that direction have become a part of the routine of procedure, may be pointed out as a possibility for larger prophylatic opportunities of the venereal disease clinics. It is imperative

that the venereal disease clinics have at their command larger physical facilities, as well as more clerical, nursing and social service assistance, in order that they may take a proper part in the campaign for the eradication of venereal disease.

XV. THE NURSING ORGANIZATION

The nursing personnel of dispensaries is generally inadequate. The nurses are chiefly found in the children's, gynecologic, surgical and tuberculosis departments. Other departments are handicapped by lack of nursing assistance. Moreover, the nurses are frequently called on to do other than purely nursing duties, and their assignment to the dispensary is often contingent on the needs of the hospital. The practice established in certain institutions in which a part of the course in the training school for nurses is devoted to dispensary work, should be generally adopted and arrangements made in such a way that each of the pupil nurses should have several months' experience in the dispensary, which would be of great value to her. The pupil nurses should remain under the direction of a head nurse designated from the training school for the direction and instruction of the pupils. If such an arrangement could be effected in all the outpatient departments connected with hospitals maintaining a training school, the nursing service in dispensaries could be made much more adequate and economical than it is now, as the number of graduate nurses should be reduced to a minimum of one in some of the dispensaries.

XVI. THE SOCIAL SERVICE DEPARTMENT

The social service department could best do its work if it were in close cooperation with the admitting and diagnostic departments of the institution. The patient's first contact should be either with the social service department, where on rapid questioning, certain facts required by law would be ascertained about his social history, before he proceeds to the diagnostic or other departments of the institution; or this function could be performed by a proper registrar who, when directing the patient to the diagnostic clinic, attaches to his history sheet a slip to be returned by the physician with a check mark indicating whether or not the services of the social service department are required in the case. Such a routine procedure would automatically call the physician's attention to the availability of social service. Likewise a method should be worked out whereby reports on cases that are referred by physicians would automatically be sent to them as soon as available.

Because of the underutilization of the dispensaries by certain racial groups in our population as a result of their ill adaptation to the new environment, it is important that the social service department learn to meet the racial point of view of the patients, as well as to have some one who would obtain, when necessary, the desired information in the language of at least the major foreign group using the dispensary.

The social service workers are often called on to perform functions which are not within the range of activities which should properly belong to them. Because in New York the hospital social workers are almost invariably nurses, they are in some instances devoting a great deal of time to nursing work. This is particularly true of the pediatric and tuberculosis clinics. Likewise, while visiting patients in their homes, the social service workers undertake at times what is tantamount to public health nursing. Social service workers need not be nurses; and, whenever patients require public health nursing, arrangements for it should be made by the social service department with the Visiting Nurses' Association or the department of health, just in the same manner as other agencies are called on when the nature and exigencies of a case call for a special service.

There is a need of a standard or uniform social service nomenclature to designate certain conditions or procedures. The terms used at the present time are often vague and do not convey the same meaning to all who consult or use the records. The records of the social service department should be uniform and contain a certain amount of indispensable information. Digests of them should be filed with the medical records. The original full records might then be kept in the social service department.

The social service department has become recognized as an important part of the dispensary and hospital organization, and should be administratively incorporated as an integral part of the institution. It should be responsible before the board of trustees just as the other departments are, and all funds that are collected for its maintenance, if there be any special need for soliciting funds for any special department of an institution, should be placed in the treasury of the institution and paid out to the workers in the same way as salaries in other departments. There is an advantage, however, in having advisory committees of interested persons to discuss cases and to bring all the outside points of view and facilities available to assist in the work. On such committees, however, there should be representatives of the boards of trustees, the administrative heads, such as the superintendent, the heads of the training school for nurses, and also a representation from the several departments of the medical organization.

The work of medical social service has as yet not reached a plane where it can be said to be standardized in its aims and methods. It is still in a formative state. There is need for a concentration of effort on the part of all those interested to secure a crystallization of function and procedure.

A central clearing house for social work might be attempted in order to standardize procedure, to make comparative studies of the work in the several institutions of the city, and to minimize the waste of money and effort by dividing the city into sections, so that workers from one institution would not need to visit patients in distant parts of the city, but could "clear" through such a central office. Such an arrangement should be rendered more feasible if standard methods and standard record forms were used.

The suggested central clearing office, with its accumulated wealth of material and experience, would also be in a position to formulate plans for instruction to be given to those who desire to enter the field of social service.

XVII. DISTRICTING THE CITY FOR CLINIC PURPOSES

In order that the dispensaries may become what it is possible for them to be, namely, important medical, public health and social centers in the community, in addition to a reform of the present point of view and of the present organization, there is a need of a better public appreciation of the scope and function of the dispensary and of a regional division of the city with regard to dispensary service.

The first could be accomplished through proper publicity on the part of the dispensaries, and by reports more informing than those published by most of the institutions. In reports the work could be presented and analyzed in an interesting and instructive way, and the costs per patient or per attendance figured in accordance with an accurate and uniformly applied system.

The districting of the city for dispensary purposes may be difficult, because of the uneven distribution of the institutions and because of the needs of teaching clinics which do not desire to be restricted. In addition, there are a number of special institutions which cannot easily be included in any plan for the division of territory; likewise, denominational institutions might find it difficult to join in a district arrangement.

The advantages which would, however, accrue from a regional distribution of responsibility make it desirable to try such an arrangement. At first, perhaps, certain departments could organize their work on a district basis, following the successful example of cooperation on the part of the tuberculosis clinics. The pediatric, venereal disease, obstetric, social service and preventive medicine departments might find it most advantageous to adopt the district division of the field. Other departments might follow later, if these experiments should prove satisfactory.

The successful experience of the Association of Tuberculosis Clinics in raising the standard of equipment and procedure is worth while considering, particularly in connection with the venereal disease clinics, in which the variations in standards and records are so great at present as to render comparisons of their work of limited value. With a pooling of interests, and a uniform system of reporting and of scoring, great improvement could be expected.

Of all the departments of general dispensaries, the tuberculosis clinics, although far from ideal, are undoubtedly the most efficient. It is true that they differ from other branches of the dispensary in that their primary function is education, supervision and the securing of a change in environment, while in most of the other departments, the primary object is treatment; but similar cooperative arrangements could be established in other branches.

The Associated Out-Patient Clinics of the City of New York is the logical body to take the initiative in such a plan and to provide leadership to bring about needed reform in the dispensary practice and organization of this city.

Medicolegal

Validity of Law Taking Away Right to Issue Certain Prescriptions

(State v. Emonds (Wash.), 182 Pac. R. 584)

The Supreme Court of Washington, in affirming a judgment of conviction of the defendant of the crime of issuing a prescription for intoxicating liquor after he had been twice convicted of unlawfully issuing such prescriptions, holds constitutional Section 8 of initiative measure No. 3, Laws of 1915, which, among other things, provides that it shall be unlawful for a physician, after he has been convicted a second time of a violation of the provisions of the act, thereafter to write any prescription for the furnishing, delivery or sale of intoxicating liquor. The defendant contended that the legislative power of the state, whether by initiative measure or an act passed by the legislature, could not deprive a regularly licensed physician of the right or privilege of prescribing intoxicating liquor as a medicine, if he believed the patient's condition required it, though it was admitted that for such offenses as that with which the defendant was here charged it would have been proper to deprive him of the right to practice medicine entirely. But the court says that no constitutional provision was called to its attention which it was contended that the law here assailed violated, and no authority was presented holding that the court may declare a legislative act invalid when it does not offend against some constitutional provision. The limitations on the legislative power must be found, if at all, in constitutional enactments, and not in the judgment or discretion of the courts. The law complained of was a valid exercise of legislative power. Nor was there any merit in the contention that, since the statute made it unlawful for a physician to issue a prescription for intoxicating liquor after having been twice convicted of unlawfully issuing such prescriptions, it was error to permit proof of more than that number. The state was not required to cease the introduction of proof when it had offered sufficient evidence to carry the case to the jury and sustain a conviction.

Excluding Children from School for Trachoma

(Martin v. Craig et al. (N. D.), 173 N. W. R. 787)

The Supreme Court of North Dakota, in affirming an order of the district court of La Moure County, quashing an alternative writ of mandamus that was issued on the petition of the plaintiff for a peremptory writ to compel the defendants to admit to school certain children, says that the defendants justified their refusal on the ground that one of the children had been found by a reputable physician and by a qualified representative of the federal health service to be afflicted with trachoma, and the other to present a case in which trachoma was suspected. It appeared that during the past few years the disease of trachoma had been present in La Moure County. The school nurse directed the attention of the county health authorities to a number of cases in which schoolchildren appeared to be affected with granulations of the eyelids; and, when some of them were examined by the superintendent of the county board of health, he diagnosed the cases as trachoma. When examined by other physicians, however, and even by representatives of the state public health laboratory, the finding was negative as to trachoma. In some of the cases that had been pronounced trachoma by the superintendent of the county board of health, and not trachoma by the representatives of the public health laboratory, the patients were sent to the government hospital at Pikeville, Ky., for treatment, and the diagnosis was trachoma. There being a number of persons afflicted with this or similar eye trouble, representations were made by the governor of the state to the federal Public Health Service, which resulted in a survey being made by a representative of the latter service, who reported that he found in La Moure County 120 positive and 350 suspicious cases of trachoma. As a result of this survey, a government hospital was established at La Moure, in which patients afflicted might be given the advantage of scientific treatment without charge. Moreover, to prevent the spread of the disease and to secure proper treatment for those affected, the county board of health promulgated an order forbidding admission to school of children who, on examination, were found to be or were suspected of being afflicted, unless they were at the time under treatment for the disease.

In this case the plaintiff produced two physicians who presented what are generally considered to be first-class professional credentials qualifying them to give expert testimony. They had also had ample opportunity to examine the patients and to diagnose the cases. In fact, the children had been patients of one of the physicians. These physicians testified that the children were not afflicted with trachoma, but with folliculosis. One of them also testified that it was injurious to the eye to treat it for trachoma when trachoma was not present; but a careful reading of his testimony disclosed that the injury resulted from a species of treatment that was likely to be resorted to only when the disease was clearly present and when the necessity for radical treatment was indicated. When qualified physicians disagree on the diagnosis of a diseased condition of particular persons, the health authorities and a school board, whose duty it is to execute the orders of the board of health, are justified in acting on the opinion of their own competent experts.

The order of exclusion in this case could not be said to be unreasonable. It excluded only those whose cases were positive and suspected, who were not at the time under treatment. The seriousness of the disease and its communicable character afforded ample foundation for such an order; and, even conceding that it might be doubted in the present case whether the children in question were affected, the doubt was one that must be resolved in favor of the authorities charged with the serious responsibility of preventing the spread of the disease. This was a case in which mandamus would not issue as a matter of right, but wherein it would issue only in the exercise of a judicial discretion; and this discretion should not be exercised in a way that might result in needlessly exposing healthy children to a disease as serious as trachoma.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

February, 1920, **19**, No. 2

*Etiology of Arthritis Deformans in Children. A. H. Byfield, Iowa City.—p. 87.
*Calcium Metabolism of Infants and Young Children, and Relation of Calcium to Fat Excretion in Stools. L. E. Holt, A. M. Courtney and H. L. Fales, New York.—p. 97.
*Incidence of Protein Sensitization in Normal Child H. M. Baker, Boston.—p. 114.
Foreign Bodies in Air and Food Passages: Report of Cases. E. E. Graham, Philadelphia.—p. 119.
*Auriculoventricular Heart Block in Children: Report of Case. J. A. E. Eyster and W. S. Middleton, Madison, Wis.—p. 131.
Abscess of Lungs in Infants and Children. H. Wessler and H. Schwartz, New York.—p. 137.
*Elimination of Acetone Bodies During Infectious Fevers. B. S. Veeder, St. Louis, and M. R. Johnston, M. C., U. S Army.—p. 141.
Two Cases of Congenital Stricture of Esophagus. J. L. Morse, Boston. —p. 144.
Recent Work in Anatomy, Physiology and Pathology of Infancy and Childhood. J. B. Holmes, Baltimore.—p. 148.

Arthritis Deformans in Children.—From a study of cases Byfield concludes that arthritis deformans in children results chiefly from a chronic infection situated in the tonsils and adenoids and in the accessory sinuses of the nose. In children less than 3 years of age, the portal of infection seems to be limited to the tonsils and adenoids. After this time removal of tonsils and adenoids is ineffective in arresting the progress of the disease. A sinus infection should be suspected as an etiologic factor if, after the tonsils and adenoids are removed, there remains elevation of temperature (even if slight), leukocytosis, poor appetite, together with a slowness of the joints to become less painful and swollen. Relapse and exacerbations are definite indications of the need of nasal treatment. Byfield believes that Poncet's disease is probably no more than arthritis deformans in an individual infected with tuberculosis. Although supportive and orthopedic measures are helpful, surgical treatment of the nasal sinuses is to be regarded as the most important therapeutic measure indicated in arthritis deformans in children. The prognosis in uncomplicated cases is good as far as arrest of the disease is concerned. The deformity and functional disability may persist for a considerable time.

Calcium Metabolism of Infants.—The average absorption of calcium oxid by healthy infants taking modifications of cow's milk was 0.09 gm. per kilogram of body weight. Since the average absorption of calcium oxid by breast fed infants was about 0.06 gm. per kilogram, it may be assumed that 0.06 gm. per kilogram is the minimum normal absorption by infants taking modifications of cow's milk. The excretion and the absorption of calcium were, in general, dependent on the amount of calcium intake, from 35 to 55 per cent. of the intake being absorbed. The calcium absorption was much lower when diarrhea was present. With an increased excretion of calcium in diarrheal stools, there was a marked decrease in soap excretion. The calcium absorption by rachitic infants was much lower than that by healthy infants. In the few cases in which observations were made on infants recovering from rickets, the calcium absorption was higher than the normal average. These infants had received cod liver oil for a considerable period. The administration of cod liver oil regularly increased the absorption of calcium, unless diarrhea was present.

Protein Sensitization.—Baker's studies show that the incidence of food sensitization of apparently normal children is almost a negligible factor, except in the case of salmon, which reaction in any case cannot be considered as an absolute indication of sensitization. The articles of diet most commonly causing disturbance in children presenting anaphylactic symptoms are: oatmeal, potato, eggs, peas, rice, casein, beef juice and chicken. This does not mean that a child with anaphylactic symptoms is not capable of taking any one or all of these articles of diet. Only a careful examination can reveal the causative factor. In many instances it is only one food, while it may be several.

Heart Block in Child.—A case is described by Eyster and Middleton of partial auriculoventricular dissociation developing in a child, aged 2 years, apparently associated with an acute nasal and throat infection. This child has been under observation for more than two years. At present the cardiac condition is that of a well compensated mitral lesion, associated with a 2:1 auriculoventricular block, with a ventricular rate between 50 and 60. The child has developed normally, and is at present in apparent good health and is normally active. A search of the literature revealed twenty reported cases of heart block in children. Nearly all of these were definitely or probably of congential origin or occurred during the course of severe and usually fatal diphtheria. The reported case is regarded as being of particular interest in reference to its probable origin and the relatively mild clinical disturbance produced by the condition.

Acetone Bodies in Infectious Diseases.—Observations were made by Veeder and Johnston on forty-one children with scarlet fever, diphtheria, measles and pneumonia. The findings show that while an increased elimination of acetone bodies may occur in the infectious diseases, this does not always take place; that in the same patient it may occur during one infection and not during a second; that it is not dependent on the severity of the infection or the degree of temperature; and lastly, that the decreased intake of food, so consistently a part of an infectious process, does not explain the causation.

Archives of Neurology and Psychiatry, Chicago

February, 1920, **3**, No. 2

*Diagnosis of Peripheral Nerve Injuries. S. D. Ingham and J. H. Arnett, Philadelphia.—p. 107.
*Nature of Aurae. L. B. Alford, St. Louis.—p. 124.
*Histopathology and Histogenesis of Syringomyelia. G. B. Hassin, Chicago.—p. 130.
*Analysis of Blood of Insane Patients. P. G. Weston, Warren, Pa. —p. 147.
Splints Used for Peripheral Nerve Cases at U. S. Army General Hospital, No. 11. R. C. Buerki, Boise, Idaho.—p. 151.
*Case of Meningo-Encephalitis (Lethargic Encephalitis). W. W. Hala and C. M. Smith, Brooklyn.—p. 160.

Diagnosis of Peripheral Nerve Injuries.—The authors discuss at length the factors concerned in the diagnosis of peripheral nerve lesions, the production of compensatory movements, and the lesions of individual nerves considered in reference to compensatory movements and other phenomena. They emphasize the importance of careful observation to avoid errors in diagnosis, especially in the atypical cases, which are the ones that offer the greatest difficulties in neurosurgical diagnosis. The fundamental requisites for accurate diagnosis include a thorough anatomic knowledge, a mastery of the mechanics of joint action and discriminating observation. With the application of these broad principles to neurosurgical diagnosis, the difficulties are minimized and the proper treatment can be instituted.

Nature of Aurae.—Alford attempts to point out anew the analogy between aurae and the hallucinations occurring in connection with sleep, hypnosis, crystal gazing, etc. According to this view, he says, aurae should be regarded not as the result of "discharges" of an epileptic nature in some part of the cortex, but as deficiency reactions, like dreams, occurring when there is a "disturbance of consciousness" of a certain type. Their relation to the loss or disturbance of consciousness in epilepsy and migraine is assumed to be the same as that of dreams to drowsy or sleep states; and their content should be regarded as being determined by the same factors that determine the content of dreams and similar hallucinations. Their relation to structural changes may be the same as that of those hallucinations which develop in connection with disease of the organs of special sense or of the nerves connecting them with the brain.

Pathogenesis of Syringomyelia.—From the study of his own case and of previous contributions to this question, the conclusion is drawn by Hassin that in syringomyelia there are a number of specific pathologic changes which differ

totally from those to be found in any other spinal cord lesion —changes which stamp syringomyelia as a distinct anatomopathologic entity. A very full report is made of the results of the microscopic examination of the spinal cord in the author's case.

Blood of Insane Persons.—The blood of thirty insane patients, selected cases of dementia praecox, epilepsy and manic-depressive insanity, was examined by Weston to determine the chlorin and urea nitrogen content. No deviation from the normal content of total nitrogen, nonprotein nitrogen, uric acid, urea, creatinin, creatin, glucose, chlorin or calcium was found.

Meningo-Encephalitis.—The case reported by Hala and Smith was interesting because it displayed not only the characteristic histopathologic lesions observed in the brain by others, but also on account of the intense purulent meningitis and ependymitis found at necropsy. The fact that an organism was isolated both antemortem and postmortem, which evidently was the etiologic factor concerned, is noteworthy. From the clinical standpoint the case was one of meningo-encephalitis, with lethargy and involvement of the motor fibers of the third, sixth, seventh, tenth and twelfth cranial nerves. The etiologic cause was a gram-negative motile bacillus, unidentified, but probably belonging to some intermediate class of the colon-typhoid-enteritidis group. Pathologically, the lesion demonstrated septic meningoencephalitis and ependymitis, with punctate hemorrhages and perivascular cell infiltration of the centrum ovale, corpus striatum and optic thalamus.

Archives of Ophthalmology, New York

January, 1920, **49**, No 1

Teaching of Ophthalmology. F. H. Verhoeff, Boston.—p. 1.
Postgraduate Teaching of Ophthalmology. M. Wiener, St. Louis. —p. 9.
Postgraduate Course in Ophthalmology. A. Duane, New York.—p. 17.
Epithelial Inlay and Outlay in Lid Repair. S. H. McKee, C. A. M. C. —p. 30.
War Injuries of Eyelids. J. M. Wheeler, Ft. McHenry, Md.—p. 35.
Vernal Conjunctivitis. W. H Luedde, St Louis.—p. 43.
Routine Office Measurement of Stereopsis. D. W. Wells, Boston. —p. 64.
Motor Muscles of Eye. E. H. Hazen, Des Moines.—p. 70.
Nature of Trachoma; Normal Histology of Conjunctiva. K. Hiwatari, Kioto, Japan.—p. 82.
Case of Atypical Albuminuric Retinitis. C. A. Clapp, Baltimore. —p. 98.

Florida Medical Association Journal, St. Augustine and Jacksonville

January, 1920, **6**, No. 7

Diagnosis of Upper Abdominal Symptoms. H. C. Dozier, Ocala. —p. 132.
Doctor and Druggist. W. M. Hankins, Daytona.—p. 138.

Journal of Abnormal Psychology, Boston

October, 1919, **14**, No 4

Psychogenesis of Multiple Personality. M. Prince, Boston.—p. 225.
A Divided Self. C. E. Cory, St. Louis.—p. 281.
Problems in Sex Education. H. W. Brown.—p. 292.

Journal of Bacteriology, Baltimore

November, 1919, **4**, No. 6

*So-Called Reduced Oxygen Tension for Growing Meningococcus. E. F. Kohman, Camp Jackson, S. C.—p. 571.
Nomenclature of Actinomycetaceae. R. S. Breed and H. J. Conn, Geneva, N. Y.—p. 585.
*Culture Medium for Maintenance of Stock Cultures of Bacteria. M. C. Worth, Detroit.—p. 603.
Value of Presumptive Tests for Coli Based on Routine Use of Lactose Bile and Lactose Broth. N. Ritter, Lawrence, Kan.—p. 609.
Morphologic Changes During Growth of Bacteria. P. F. Clark and W H. Ruehl, Madison, Wis.—p. 615.

So-Called Reduced Oxygen Tension for Growing Meningococcus.—Experiments were made by Kohman to determine the rôle that carbon dioxid plays in the cultivation of the meningococcus. He found that by making defibrinated human blood agar medium with a p_H of from 7.8 to 8.0, and incubating the meningococcus in a partial atmosphere of carbon dioxid, the same medium may be used for this organism which is used for the pneumococcus and the streptococcus.

Culture Medium for Maintenance of Stock Culture of Bacteria.—A medium of the following composition Worth found favorable for the preservation of *B. typhosus, B. paratyphosus, B. coli, B. dysenteriae, B. pertussis, Micrococcus catarrhalis,* a streptococcus, and the meningococcus and gonococcus for several months without transfer: Nutrient gelatin: chopped beef, 500 gm.; water, 1,000 c.c. Heated in a water bath (50-55 C.) for one hour. Strain through a bag cloth, the volume being restored: peptone, 10 gm.; sodium chlorid, 5 gm.; gelatin, 100 gm. Dissolve, filter, adjust to 1 per cent. acid. Sterilize for twenty minutes at 100 C. Inoculation is made and the cultures are placed at 37 C. for twenty-four hours after which they are stored at 20 C. with the exception of the meningococcus and gonococcus which are kept at 37 C. Without further attention *B. typhosus* retains its viability, characteristic appearance, and agglutinating power for eight months; *B. coli* for eleven months; meningococcus for eight months; *B. paratyphosus, B. pertussis* and *B. dysenteriae* for eight months. The streptococcus was still in good condition at the end of four months.

Journal of Infectious Diseases, Chicago

February, 1920, **26**, No. 2

*Varieties of Streptococci with Special Reference to Constancy. B. J. Clawson, Chicago.—p. 93.
*Human Fecal Streptococci. C. J. Oppenheim, Chicago.—p. 117.
*Some Factors Influencing the Potency of Concentrated Antitoxic Serum. C. R. Hixson, Woodworth, Wis.—p. 130.
Influence of Normal Beef Serum on Anthrax Bacillus. J. A Kolmer, D. C. Wanner and M. F. Koehler, Philadelphia.—p. 148.
*Some Factors Influencing the Final Hydrogen Concentration in Bacterial Cultures with Special Reference to Streptococci. H. Jones, Chicago.—p. 160.
Effect of Pasteurizing Temperatures on Paratyphoid Group. E. M. Twiss, Chicago.—p. 165.
*Fate of Streptococcus Hemolyticus in the Gastro-Intestinal Canal. D. J. Davis, Chicago.—p. 171.
*Influence of Brilliant Green on Diphtheria Bacillus. J. A. Kolmer, S. S. Woody and E. M. Yagle, Philadelphia.—p. 179.

Varieties of Streptococci and Constancy.—The work reported by Clawson deals with the characteristics of strains of streptococci isolated from various sources. Particular attention is given to the constancy of the special characteristics of streptococci, such as peculiarities in morphology, the action on the blood-agar plate, the fermentation of the various carbohydrates, and the immune reactions, such as agglutination and complement fixation.

Human Fecal Streptococci.—Mannite fermenting nonhemolytic streptococci, according to Oppenheim, are the characteristic predominant types found in the feces of normal individuals. The "indifferent" variety of streptococcus in the feces of normal persons is inconstant in its indifference to the formation of green; green formation would seem to be favorably influenced by the alkalinity of the mediums. Hemolytic streptococci are but exceptional findings in the stools of normal, healthy people, and are inconstant in occurrence. No apparent morphologic characteristics, aside from those dependent on rapid, luxurious growth, characterize the human fecal streptococci.

Potency of Concentrated Antitoxic Serum.—The experiments reported by Hixson were designed to investigate the influence of heat on the antitoxic content of the globulin fraction.

Final Hydrogen-Ion Concentration in Bacterial Cultures.—Jones' results show that, to obtain any accurate information regarding the final hydrogen-ion concentration of an organism, a number of factors should be taken into consideration. This characteristic, the limiting hydrogen-ion concentration of a given organism, to have any significance or subsequent application should be defined in terms of the composition of the medium, the initial reaction and any other conditions which favor or hinder abundant growth of that organism.

Streptococcus Hemolyticus in Digestive Canal.—Examination of the gastro-intestinal canal at various levels in rabbits fed hemolytic streptococci showed that this organism does not develop appreciably in the intestine, nor does it readily gain a permanent foothold there. Rabbits with generalized streptococcus infection in joints, blood, etc., showed no

hemolytic streptococci in the intestinal contents. Gastric juice of normal acidity from man and from rabbits kills these hemolytic micro-organisms in from two to five minutes. Gastric juice in achylia may not kill them in several hours. In normal human feces hemolytic streptococci were not found by Davis in fifty-three cases. Hemolytic streptococci when mixed with normal feces will live in the icebox for at least several days. In the incubator they tend to die out rapidly.

Effect of Brilliant Green on Diphtheria Bacillus.—Brilliant green was found highly bactericidal and antiseptic for a virulent diphtheria bacillus in vitro by Kolmer and his associates; the presence of blood and serum in the medium reduced the bactericidal activity. The dye was found also highly bactericidal and antiseptic for staphylococci. Brilliant green possesses much less bactericidal and antiseptic activity for *B. typhosus* and *B. coli*, particularly for the former. The use of brilliant green in the treatment of carriers of diphtheria and pseudodiphtheria bacilli usually resulted in the temporary disappearance of these bacilli from the nose, throat and ears of the treated persons; permanent ridding of these tissues of the bacilli, however, was not observed. Owing to the high bactericidal activity of brilliant green for *B. diphtheriae* and such pathogenic cocci as staphylococci, streptococci and pneumococci, the authors suggest the probability that the clinical use of a 1:250 solution of the drug in water may prove of value in the local treatment of infections caused by these organisms.

Medical Record, New York

January, 1920, **97**, No. 3

Diagnostic Pitfalls in Pulmonary Tuberculosis. M. Fishberg, New York.—p. 89.
Genesis and Diagnosis of Mental Diseases. E. Brodsky, Westport, Conn.—p. 94.
*Reflex Phenomena in Influenza Cases. S. Ginsburg, New York.—p. 98.
Roentgenography in Artificial Pneumoperitoneum. A. S. Hyman, Dorchester.—p. 100.
Community Health Units and Health Insurance. A. C. Burnham, New York.—p. 103.
Legislative History of Compulsory Insurance in State of New York. J. P. Davin, New York.—p. 105.
Lapsus of Memory. H. Laveson, New York.—p. 106.

Reflex Phenomena in Influenza Cases.—The two chief characters which Ginsburg observed in his cases were: 1. The almost constant presence of pleuropulmonary involvement in every case of pandemic influenza, no matter how mild the clinical course of the disease. 2. The almost invariable accompaniment of reflex phenomena in the neck, chest, abdomen, or back, whenever pleuropulmonary involvement was found on physical examination, at some time during the course of the disease. Ginsburg says, that it was striking to find patient after patient, on the first day of the disease, complaining of reflex pain with no lung signs, and, then later to develop pleuropulmonary signs in accordance with the reflex phenomena. Frequently, on further investigation of the case, he was able to find the proof that a diseased viscus was responsible for the visceromotor and viscerosensory phenomena.

Missouri State Medical Ass'n Journal, St. Louis

February, 1920, **17**, No. 2

Preventive Medicine and War. M. P. Ravenel, Columbia.—p. 49.
Acute Empyema; Diagnosis and Treatment. W. T Coughlin, St. Louis.—p. 56.
Treatment of Empyema by Carrel-Dakin Method. H. E. Happel, St. Louis.—p. 59.
*Primary Carcinoma of Nasopharynx; Report of Case. O. A. Smith, Farmington.—p. 62.
Hysteria. T. F. Lockwood, Butler.—p. 63.
Ear, Nose and Throat Service in a Base Hospiatl. S. S. Burns, St. Louis.—p. 69.

Primary Carcinoma of Nasopharynx.—A woman, aged 31 years, had had trouble with her nose for about one year when Smith saw her. Anterior rhinoscopy was practically negative. Posterior rhinoscopy revealed a mass in the vault of the pharynx resembling to some extent adenoids, but seemed too firm for adenoids, was irregular and presented a fungous arrangement. This mass occupied almost the entire vault so that the obstruction to breathing through the nose was quite complete. Glandular enlargements to the size of hazelnuts were noticeable along the sternocleidomastoid muscle on both sides of the neck. Blood examination revealed a leukocytosis of 12,000; hemoglobin 70 per cent. Blood Wassermann was negative, urine normal. The mass was removed and it proved to be a carcinoma. A large swelling developed under the angle of the right jaw. The glands extending down the right side of the neck to the clavicle were immensely enlarged, attaining the size of a small cocoanut and other masses of enlarged glands developed, some of them on the lower extremities. The masses on the neck and limb broke down and a septic condition developed with chills and fever. Nausea and vomiting began soon and continued until her death, seven months after operation.

Neurological Bulletin, New York

September, 1919, **2**, No. 9

*Aneurysm in Posterior Cranial Fossa. H. S. Howe, New York.—p. 323.
*Chronic Nondegenerative Hereditary Chorea. I. S Wechsler, New York.—p. 329.
Traumatic Neurosis. M. Osnato, New York.—p. 334.
Traumatic Hysteria. M. Osnato, New York.—p. 341.
*Cerebral Glioma and Acute Hemorrhagic Encephalomyelitis. H. S Howe, New York—p. 349.

Aneurysm of Right Vertebral Artery.—Analysis of his findings leads Howe to conclude that the diagnosis of intracranial aneurysm in his case was reasonably certain on consideration of the clinical history and the neurologic findings. The history was that of irritation and later paralysis of the right seventh, eighth, tenth, eleventh and twelfth nerves. These lesions could be produced by a new growth, a basilar meningitis or an aneurysm of the vertebral arteries, but it is not probable that a new growth in this locality of four years' duration could produce this group of findings without also causing compression of the medulla or cerebellum and signs of increased intracranial pressure. Basilar meningitis was excluded by the negative serologic findings. A murmur was heard, and while murmur alone is not pathognomonic of aneurysm, in conjunction with other findings it does indicate aneurysm, and in this case it lead Howe to make a diagnosis of aneurysm of the right vertebral artery originating at the junction of this vessel with its largest branch, the posterior inferior cerebellar.

Chronic Nondegenerative Hereditary Chorea.—Wechsler reports the case of a young woman, aged 36, who had been suffering from a chronic nonprogressive chorea for sixteen years. Her father undoubtedly had chorea for twenty years, but, apparently, it was not degenerative in character. One brother had "shakings" of the arms; one daughter was "nervous"; two boys had chorea, one of them a severe form which had lasted almost three years with some mild remission, the other a continuous mild form, also of three years' duration. The clinical picture of the patient herself was typically huntingtonian in behavior. There was no doubt about the hereditary nature of the condition, three generations showing chorea of a continuous and prolonged nature. But, the patient did not show two of the most prominent symptoms which go with a Huntington's chorea. The patient's condition is not progressive, in fact, it is stationary, if not somewhat better; she has no defective mentality, not to speak of even an approach to dementia. Her attention alone is defective. She has attacks of fainting or so-called spells of weakness, which speak in its favor, but there is nothing else, either of psychic or somatic nature, to confirm that diagnosis; nor would a hysterical condition be compatible with chorea. Chorea gravidarum is a remote possibility in this case as the condition began ostensibly with a miscarriage, but that type of chorea usually stops with the emptying of the uterus and only rarely becomes chronic. Also it is never hereditary. Senile chorea is out of the question. Paramyoclonus multiplex is ruled out because of the absence of the lightning-like rapidity and universality of contraction found in this disease, and the bizarre character of gait, facial and tongue movements, and the hereditary or familial attributes are lacking.

Cerebral Glioma and Encephalomyelitis.—The antemortem diagnosis of epidemic encephalitis made by Howe was not

confirmed at the necropsy. A glioma of the right cerebral hemisphere and a hemorrhagic encephalomyelitis were found. The existence of the glioma, although it was of large size, had never been suspected as it had caused neither general symptoms nor focal signs.

New York Medical Journal

Jan. 17, 1920, **14**, No. 3

Acquired Retrodisplacements of Uterus. J. O. Polak, Brooklyn. —p. 89.
Technic of Tonsillectomy in Use at Camp Hancock Army Hospital, 1918. G. M. Coates, Philadelphia, and M. Raskin, Baltimore.—p. 92.
*Ligation of Internal Iliac Artery in Gynecologic Operations. R. Massart, Paris.—p. 94.
Hemostasis Obtained with Small Rubber Bands Instead of Ligatures. A. L. Soresi, New York.—p. 96.
Case of Dwarfism in Twins. H. Goldstein and M. Schneck, New York.—p. 97.
History of Patients Suffering from Rectal Disorders in Relation to Diagnosis. A. A. Landsman, New York.—p. 100.
Analysis of Eighty Cases of Bronchial Asthma. A. Sterling, Philadelphia.—p. 104.
Poland World War, from Medical Aspect. F. A. Fronczak, Buffalo. —p. 107.
Sarcoid Tuberculosis of Skin C. G. Cumston, Geneva, Switzerland. —p. 112.

Ligation of Internal Iliac Artery in Gynecologic Operations.—According to Massart, ligature of the internal iliac artery, in extensive abdominal hysterectomy for cancer of the neck of the uterus, is at times indispensable; at least, it is to be advised in the majority of cases. This ligature affects all of the territory irrigated by the branches of the internal iliac artery, including the uterine artery. It prevents oozing in the vaginal section, facilitates the maneuvers of liberating the ureters, and relieves the surgeon from caring for a long and minute hemorrhage. Massart practices Faure's ligation of this vessel.

New York State Journal of Medicine

January, 1920, **20**, No. 1

Neurologic Cases with Eye Manifestations. W. B. Weidler and J. M. Joughin.—New York.—p. 1.
Treatment of Cancer of Uterus. H. C. Taylor, New York.—p. 8.
Cautery Methods in Treatment of Uterine Cancer. V. L. Zimmermann, Brooklyn.—p. 11.
Social Insurance. H. L. Winter, Cornwall.—p. 15.
Development of State Departments of Health in Relation to Health Insurance and Industrial Hygiene. A. B. Wadsworth, Albany. —p. 21.

Northwest Medicine, Seattle, Wash.

January, 1920, **10**, No. 1

Septic Bone Infections with Special Attention to Osteogenesis in Sepsis. E. A. Rich, Tacoma.—p. 1.
*Surgical Treatment of Trifacial Neuralgia. A. W. Adson, Rochester, Minn.—p. 6.
Eighteen Months' Experience with Radium. A. Jordan, Seattle.—p. 11.
Surgery Versus Radium or Roentgen Ray in Treatment of Uterine Fibroids. A. A. Matthews, Spokane.—p. 15.
Bacteriology of Influenza. M. E. Steinberg, Portland.—p. 18.
Discrepancies and Standardization of Wassermann Test. G. Hollister, Spokane.—p. 21.
Use of Dionin in Wood Alcohol Blindness. R. A. Fenton, Portland. —p. 22.

Surgical Treatment of Trifacial Neuralgia.—After dividing the posterior root in sixty-seven cases of trifacial neuralgia during the last two and one-half years, Adson is convinced that patients can be relieved of this disease by this procedure without any serious complications, and he strongly advocates that patients be encouraged to have the radical operation performed in preference to the alcohol injection or avulsion of the peripheral branches, unless there is some doubt concerning the diagnosis, or if the patient is a poor operative risk, or requires preliminary preparation.

Ohio State Medical Journal, Columbus

Jan. 1, 1920, **16**, No. 1

Pre-Operative Treatment of Hyperthyroidism. W. D. Haines, Cincinnati.—p. 7.
Value of Pain as Symptom. L. Baxter, Newark, Ohio.—p. 11.
Clinical Serology in Relation to Disease of Eye, Ear, Nose and Throat. O. Berghausen, Cincinnati.—p. 14.
Otolaryngological Work at Hospital for Head Surgery, Cape May, N. J. J. M. Ingersoll, Cleveland.—p. 17.
Results of Routine Wassermann Tests in Children. C. I. Spohr, Columbus.—p. 21.
Enlarged Thymus; Symptoms and Treatment. E. R. Brooks, Cleveland.—p. 23.
Value of Public Health Nurse to Community. H. R. Stewart, New York.—p. 26.

Public Health Journal, Toronto

January, 1920, **11**, No. 1

Preparation of Smallpox Vaccine. J. G. Fitzgerald, Toronto.—p. 585.
Some Successes and Some Failures of Medical Profession. W. B. Moore, Kentville, N. S.—p. 590.
Plan for More Effective Federal and State Health Administration. F. L. Hoffmann, Newark, N. J.—p. 597.
Prostitute as Health and Social Problem. R. S. Yarros, Chicago. —p. 606.
Poverty as Factor in Disease. C. E. A. Winslow, New York.—p. 612.

Southwestern Medicine, El Paso

January, 1920, **4**, No 1

Paraffin Wax Method of Treatment of Burns. C. G. McMahon, Miami. —p. 1.
Roentgen Ray and Radium Actions and Reactions. A. Soiland and C. W. Stewart, Los Angeles.—p. 7.
Oral Infection and Systemic Disease. E. J. Cummins, El Paso—p. 12.

Surgery, Gynecology and Obstetrics, Chicago

February, 1920, **30**, No. 2

*Plastic Surgery of Facial Burns. H. D. Gilles, Sidcup, England. —p. 121.
Gunshot Fractures of Femur. A. Bowlby, London.—p. 135.
*Postoperative Tetanus. R. R. Huggins, Pittsburgh.—p. 142.
Ununited Fractures of Hip. M. S. Henderson, Rochester.—p. 145.
*Operation for Advanced Carcinoma of Tongue or Floor of Mouth. V. P. Blair, St. Louis.—p. 149.
Acute Empyema of Throat Treated by Minor Intercostal Thoracotomy. P. W. Aschner, New York.—p. 154.
*Operative Treatment of Advanced Pulmonary Tuberculosis. W. Meyer, New York.—p. 161.
*Rapid Expulsion of Placenta. G. Sklavounos, Athens, Greece.—p. 168.
Sterility. B. Solomons, Dublin, Ireland.—p 173.
*Safety Factors in Surgery, with Especial Reference to Blood. L. Frank, Louisville.—p. 182.
*Bilocular (Hour Glass) Stomach. V. Pauchet, Paris.—p. 190.
Bone Changes in War Amputation Stumps. T. G. Orr, Kansas City. —p. 195.
*Cysticercus Racemosus (Taenia Solium) Infection of Spinal Cord. A. R. Kimpton, Boston.—p. 198.
Plastic Repair of Hard Palate for Loss of Substance from Gunshot Wound. F. H. Albee, New York.—p. 201.
*Epididymectomy, an Improved Technic. M. Stern, New York.—p. 205.
Prostatic-Ambulant Postoperative Management. A. E. Rockey, Portland, Ore.—p. 206.
New Cystoscopic Table. H. L. Kretschmer, Chicago.—p. 207
*Rammstedt Operation in Adult. H. F. Graham, Brooklyn.—p. 208.
*Use of Intramedullary and Extracortical Beef Bone Splints in Repair of Fractures of Long Bones. A. C. Brenizer, Charlotte, N. C. —p. 209.
Large and Small Doses of Radium. C. W. Hanford, Chicago.—p. 210.
Presentation of a New Pan Device on a Cystoscopic Table. C. S. Levy, Baltimore.—p. 212.

Plastic Surgery of Facial Burns.—The result of various plastic methods employed by Gillies for the relief of the distressing deformities and disabilities arising as the result of contractions following severe facial burns are described in detail in connection with case reports.

Postoperative Tetanus.—In the case cited by Huggins, one of complete removal of the uterus and appendages the patient developed symptoms which were typical of tetanus but bacteriologic proof could not be obtained. Smears and cultures were made from the abdominal wound which had healed without any evidence of infection. Cultures were also made from the vagina. No growth could be obtained which in any way resembled the tetanus bacillus. This was true also of the catgut used at operation. A study of the spinal fluid was also negative. The case suggests the possibility of false tetanus under certain circumstances.

Operation for Cancer of Tongue.—The operation described by Blair is said to be properly applicable to the more advanced cases, especially those that also involve the jaw, the floor of the mouth or the base of the tongue, or those with palpable involvement of the submaxillary nodes, and to early cases in which, after removal by a less radical procedure, examination reveals a high grade malignancy. It consists in the block removal from below of the tongue, the structures in the floor of the mouth, all muscles above the body of the hyoid bone and stylohyoid muscles, the submaxillary and submental lymph nodes and as much of the

faucial pillars and pharynx as desired, together with thorough cauterization of the mandible wherever the ulcer approaches or involves it. The mandible is not divided.

Extrapleural Thoracoplasty in Pulmonary Tuberculosis.—Meyer discusses his experience with extrapleural thoracoplasty in suitable patients with advanced tuberculous affection of the lung, in whom therapeutic pneumothorax is not feasible.

Rapid Expulsion of Placenta.—The injection of salt solution into the placenta through the omphalic veins in the cord was tried in thirty hospital cases at the suggestion of Sklavounos. The placenta was expelled spontaneously within from three to five minutes, and without any other manipulation. In a few instances the injection was not entirely successful and the Credé method had also to be used. The failures were due to imperfections in technic. The method is said to be superior to the Credé method and to manual removal. The necessary instruments are: (1) an ordinary syringe; (2) a metallic cannula attached to the distal end of the rubber tube (this cannula must have a perimeter of 1.5 cm. and a groove behind the lumen to prevent slipping of the cord when attached to the cannula); (3) a pair of scissors and a clamp. Fifteen or 20 gm. of salt are added to 1,500 c.c. of sterilized hot water (temperature 50 to 60 C.). The cannula is inserted in the immobilized lumen of the vein and the vein is tied about the groove in the cannula. The salt solution is injected into the vein which swells and takes on a white instead of the previous blue color. The swelling of the arteries proves that the injection has been successful. So soon as 200 c.c. of the salt solution is injected, detachment of the placenta begins. When water comes from the arteries, they are pressed with a clamp and the result of the injection is waited for. To prevent formation of clots in the vessels and facilitate the circulation of the injected liquid, Sklavounos adds 2 per cent. sodium nitrate to the salt solution.

Safety Factors in Surgery.—Frank's observations lead him to conclude that a patient is not in the best possible condition to undergo any surgical procedure when he has a hydrogen-ion concentration of his blood below p_H 7.35; a carbon-dioxid tension in the alveolar air below 35; a soda tolerance test above 15; an Ambard coefficient above 0.10; a urine which shows but little variance in quantity from day to day and with the specific gravity varying less than seven points, regardless of the intake; also nocturnal polyuria; a phenol-sulphonephthalein output below 40, unless it can be accounted for by disease of other organs, the liver particularly.

Bilocular Stomach.—Pauchet has operated in twenty-five cases of bilocular stomach, a resection being done in twenty-three cases. These operations were divided as follows: one gastroplasty; two gastrogastrostomies; either alone or associated with a gastro-enterostomy; four mediogastric resections, and eighteen pylorogastrectomies. He has reoperated on two patients on whom a pyloroplasty, gastrogastrostomy and gastro-enterosotmy had been performed. These operations resulted in two deaths; one case was complicated by a perigastric abscess and in the other there was an extensive perforating ulcer. These operations were performed under reginal or spinal anesthesia with or without several whiffs of nitrous oxid for several seconds. Pauchet says that the extensive resections have given by far the best end-results.

Tenia Solium in Spinal Cord.—Kimpton is of the opinion that his case is the first in this country and the only case where a pork tapeworm has been removed successfully from the spinal cord during life. Mercur found a similar tumor of the spinal cord, but at necropsy. A diagnosis of spinal cord tumor at the fourth or fifth dorsal segment had been made in Kimpton's case and operation was advised. A laminectomy was done on the fourth, fifth and sixth dorsal vertebrae and the cord exposed. There was a distinct difference in the tension of the cord. The tension appeared to be greater, and the cord was paler in this region. The cord membranes were incised and this revealed a translucent tumor. The tumor was easily shelled from the cord. It appeared as a gelatinous mass. The pathologic diagnosis was cysticercus racemosus.

Epididymectomy.—Stern separates the epididymis from the blood supply of the testis by careful dissection and then ligates the epididymis.

Rammstedt Operation on Adult.—Graham reports a case of pylorospasm in a man, aged 46. Operation produced a cure.

Beef Bone Splints.—Brenizer discusses the use of beef bone splints and cylinders which have been boiled and kept in alcohol until every organic living cell is dead.

Texas State Journal of Medicine, Fort Worth

January, 1920, **15**, No. 9

Influenza; Its Complications and Sequels. A. Woldert, Tyler.—p. 315.
Influenza Echoes and Experiences. J. M. Frazier, Belton—p. 321.
Future of Tuberculosis. H. F. Gammons, Dallas.—p. 323.
Some Predisposing Factors in Development of Pulmonary Tuberculosis. R. B. Homan, El Paso.—p. 327.
Classification and Treatment of Pulmonary Hemorrhage Due to Tuberculosis. S. E. Thompson, Kerrville.—p. 328.
Psychotherapy in Tuberculosis. W. O. Wilkes, Waco.—p. 331.
Serum Treatment of Acute Lobar Pneumonia. J. E. Robinson, Temple.—p. 335.

U. S. Naval Medical Bulletin, Washington, D. C.

Hospital Corps Quarterly

January, 1920, No. 12

Air Station at Dunkirk. R. W. Meals, U. S. Navy.—p. 9.
Harmful Parasites of Man. R. H. Laning, M. C., U. S. Navy.—p. 22.
Hospital Corps Training School at Great Lakes. R. G. Davis, M. C., U. S. Navy.—p. 30.
In the Thick of the Fight. F. Tousic, U. S. Navy.—p. 35.
Testing Aneroid Sphygmomanometers. C. Schaffer, M.C., U. S. Navy.—p. 40.
Naval Pharmacist Afloat. F. J. Shea, U. S. Navy.—p. 44.
Pharmacist's Mates School. P. F. Dickens, M. C., U. S. Navy.—p. 46.
Technic of Roentgen Ray Plate Development. A. P. Evans, M. C., U. S. Navy.—p. 68.

Virginia Medical Monthly, Richmond

January, 1920, **46**, No. 10

*Surgical Treatment of Intestinal Stasis. J. S. Horsley, Richmond.—p. 247.
Râles from Expiration and Cough as a Means to Early Diagnosis in Tuberculosis. B. L. Taliaferro, Catawba Sanatorium.—p. 251.
*Hemoptysis. E. E. Watson, Salem.—p. 252.
*Home Treatment of Pulmonary Tuberculosis. W. E. Brown, Catawba Sanatorium.—p. 254.
Artificial Pneumothorax. F. G. Simmons, Salem.—p. 257.
Tuberculosis and General Practitioner. H. G. Carter, Burkeville.—p. 259.
*Simple Method of Controlling Secondary Hemorrhage after Operation for Piles. R. B. James, Danville.—p. 263.
Diagnostic Points for Re-Education of Neglected Pareses, and Similar Impairments of Motion. J. M. Taylor, Philadelphia.—p. 264.

Surgical Treatment of Intestinal Stasis.—Horsley reports the end-results in seventy-four cases of intestinal stasis in which he operated between February, 1912, and September, 1917. In twenty-two patients the operation performed was appendectomy and division of Lane's band. Thirteen of these reported that they were greatly improved, eight that they were improved. There was none unimproved and no deaths. One patient did not report. In twenty-seven cases, the Coffey, or hammock operation, which consists in suturing the gastrocolic omentum to the abdominal wall, was done. Of this number, twelve reported great improvement, ten were improved, and two were unimproved. Two died, and from one patient no report could be obtained. In seventeen patients cecosigmoidostomy was done. In this group six patients were greatly improved, four were improved, five were unimproved, one patient died and from one patient no report was obtained. In five cases the Coffey operation and cecosigmoidostomy was done. Of these patients three were greatly improved and two were unimproved. In three cases ileosigmoidostomy was done. None of these patients was greatly improved, but two are classed as improved. All recovered from the operation. One patient died from pneumonia two years and two months after leaving the hospital. Summing up this group of seventy-four cases, thirty-four patients (46 per cent.) are greatly improved; twenty-four (32.5 per cent.) are improved, nine (12 per cent.) are unimproved, four (5.5 per cent.) are dead, and three (4 per cent.) were not heard from. The reports from these patients varied

from five months to five and one-quarters years from the time of operation.

Hemoptysis.—This paper was abstracted in THE JOURNAL, Nov. 29, 1919, p. 1722.

Home Treatment of Pulmonary Tuberculosis.—This paper was abstracted in THE JOURNAL, Nov. 29, 1919, p. 1722.

Controlling Secondary Hemorrhage After Operation for Piles.—In a case cited by James secondary hemorrhage was controlled without disturbing the patient, by slipping a rubber glove finger over a glass tube, 3 inches long, and wrapping the open end of the glove finger securely around the near end of the tube, and attaching to the projecting tube a rubber bulb such as is used in a common atomizer. By inserting this rubber covered tube between the sphincters and pumping in air, sufficient compression was produced to control the hemorrhage, with no pain or distress to the patient and without disturbing him in the least. A clamp was placed on the rubber tubing, and the apparatus was left in place for three days, when on removing the clamp the air escaped and in an hour or two the apparatus had come away without the knowledge of the patient.

West Virginia Medical Journal, Huntington

January, 1920, **14**, No. 7

Fractures. W. W. Golden, Elkins.—p. 241.
Failure of Restricted Operations in Cancer of Breast. A. McGlannan, Baltimore.—p. 247.
Schick Reaction. W. E. Smith, Minden.—p. 250.
Head Injuries; Some Case Reports. J. M. Emmett and R. J. Wilkinson, Huntington.—p. 254.
Angioneurotic Edema. W. E. Vest, Huntington.—p. 258.
Diabetes Mellitus with Multiple Abscesses, Report of Case. O. L. Perry, Elkins.—p. 261.

Wisconsin Medical Journal, Milwaukee

January, 1920, **18**, No. 8

Preventive Medicine: Stool Examinations for Diagnosis of Intestinal Parasites. W. D. Stovall, Madison.—p. 328.
Diphtheria, Vincent's Angina and Other Infections of Nose and Throat. W. D. Stovall, Madison.—p. 329.
Need for Morbidity Registration in Wisconsin. R. Olesen, Madison. —p. 333.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

October, 1919, **42**, Part 3

*War Neurasthenia—Acute and Chronic. D. W. Carmalt Jones.—p. 171.
*Hyperglycemia in Mental Disorders. F. H. Kooy.—p. 214.

War Neurasthenia.—After having cases of this type under observation for one year, Jones is convinced of the reality, the severity and the amenability to treatment of this disease. He believes that the symptoms of this condition are due, in part at least, to prolonged overstimulation of the ductless glands, chiefly the suprarenal. Jones pleads for recognition of this disease and its appropriate treatment by competent men, if possible in a special hospital given over entirely to these cases.

Hyperglycemia in Mental Disorders.—Two of ten cases of dementia praecox examined by Kooy with reference to the blood sugar content showed a higher count than 1.30 per mille after breakfast. In nine cases of dementia paralytica, the average of the highest amounts was 1.33 per mille. Six of the nine patients had, without excitement or apoplexy, an amount above 1.30 per mille after breakfast. An examination of nineteen cases of melancholia showed that in this disease the blood sugar is much increased. If 1.10 before breakfast is the normal limit, then nine patients had surpassed that figure. Examination of four cases of true neurasthenia and psychasthenia, without any bodily abnormalities, showed plainly that emotions cause hyperglycemia in man. The blood sugar is very much increased when the patients who have confusional insanity are in a highly emotional state, whereas it decreases on recovery. The results with mania are extremely variable. Optimism and highly increased blood sugar run parallel. Increase in blood sugar, as a rule, is highest in real emotional states, such as may occur in mania at its climax; it is smaller, although still present, in the milder form of mania, and absent in those hypomaniacal forms in which the patient is only optimistic, cheerful and inclined to be jocular. Emotions, especially those of a depressive character, cause an increase in blood sugar They, therefore, have a deteriorating influence on diabetes mellitus. They may cause a temporary hyperglycemia and even glycosuria in normal persons not suffering from saccharin diabetes. Even a considerable increase in blood sugar need not be a symptom of disordered metabolism. Hyperglycemia may occur with any emotional state in mental disorders. Kooy found it to occur in emotional states of patients suffering from general paresis, epilepsy, dementia praecox, traumatic neurosis and neurasthenia. Glycosuria and hyperglycemia are most frequent in melancholia. Kooy's investigation has shown that hyperglycemia before breakfast (spontaneous hyperglycemia) is not a constant symptom in melancholia, but it was constantly present after the patients had taken ± 200 c.c. of milk and ± 100 gm. of bread and butter (alimentary hyperglycemia). With marked anxiety there was the highest amount of sugar in the blood.

Bristol Medico-Chirurgical Journal

December, 1919, **36**, No. 137

Contemporary Medicine from Standpoint of Pathology. I. W. Hall. —p. 9.
Disease in Mesopotamia. F. P. Mackie.—p. 118.
Treatment of Ununited Fractures: Use of Bone Grafts. E. W. H. Groves.—p. 132.
Stammering as It Occurred in War. R. G. Gordon.—p. 143.

Lancet, London

Jan. 17, 1920, **1**, No. 5029

Application of War Methods to Civil Practice. A. Bowlby.—p. 131.
Surgery of Heart. C. Ballance.—p. 134
Treatment of Malunion in Fractures of Femur. W. E. Wilson.—p. 139.
*Meaning of Tachycardia. R. M. Wilson.—p. 146.
Case of Dislocation of Cervical Spine. J. P. Buckley.—p. 149.
*Ureter Calculus of Unusual Size. F. Kidd.—p. 150.
Diverticulitis, Report of Cases. G. G. Turner.—p. 151.
*Acute Hydropneumothorax J. W. T. Thomas.—p. 152
Case of Sudden Complete Procidentia Recti in Young Adult Male. W. R. M. Turtle.—p. 153.

Surgery of Heart.—In certain cases of purulent infection of the pericardium, Ballance holds that the culdesac of Haller should be drained. He believes that the operation is justified on anatomic and pathologic considerations. He feels that the surgery of the heart will occupy in the coming time a conspicuous place in surgical practice. The reward of success will attend efforts in so far as the heart is treated as one of the ordinary tissues of the body and the method of operation conforms to the fundamental principles of surgery.

Significance of Tachycardia.—According to Wilson, tachycardia in a man who is up and about is compensatory in character, the addition of acceleration to augmentation. It points to the presence of a mild infection, and can be removed only by removing the infection. There is evidence that the action of the toxin is directly on the cardiac vagus.

Ureter Calculus of Unusual Size.—The stone in Kidd's case measured 2¼ inches in its long diameter and 1 inch in its short diameter, and weighed 1 ounce. It consisted of phosphates, with a trace of oxalates, and contained no cystin, no carbonate and no uric acid. The stone lay below the pelvic brim. Very few symptoms had been caused by it.

Acute Hydropneumothorax.—In Thomas' case the acute hydropneumothorax resulted from an old gunshot wound of the chest. The patient recovered in spite of a communication between the pneumothorax and the stomach.

Jan. 24, 1920, **1**, No. 5030

Pulmonary and Other Forms of Tuberculosis. H. B. Shaw.—p. 179.
*Carbon Monoxid Poisoning in Warfare. W. J. Rutherfurd.—p. 184.
*Rickets in Germany: Study of Effects of War on Children. Engel. —p. 188.
Case of Severe Cerebral Toxemia, Following Intravenous Injection of Novarsenobillon. R. J. G. Parnell.—p. 190.
*The Schick Reaction for Determination of Susceptibility to Diphtheria. H. M. Leete.—p. 192.
Treatment of Malaria in Macedonia. A. G. Phear.—p 194
Bilharziasis: Its Incidence and Eradication F. Milton.—p. 196.

Carbon Monoxid Poisoning in Mines.—Carbon monoxid is produced during explosion of charges in mines. Where the mine is deeply placed, or where a small charge has been used so that the surface of the ground has not been broken, the gas is either forced into the underground system of mine galleries or gradually percolates into the galleries through cracks and porosities in the ground and in these circumstances the miners become subject to this form of gas poisoning, the severity of which may range from mere headache and debility to coma and death. In some cases the reflux of carbon monoxid after an explosion has come up to the mine shaft and caused gas poisoning in the trench in the near vicinity to the mine entrance. Carbon monoxid has the effects of a cumulative poison, even in relatively small quantities. The various explosive substances (with certain exceptions, such as the acetylene compounds) contain within themselves a considerable amount of oxygen, which is, however, generally insufficient for the complete oxidation of all the constituent oxidizable elements. In consequence, not only may there be the formation of carbon monoxid, but hydrogen, marsh gas and certain other oxidizable substances may be liberated as the result of the detonation of various explosives. The methane is said to result from interaction of the hydrogen with the oxids of carbon as the hot gases cool down and not to be formed at the time of the explosion. Nitroglycerin is an exemple of the explosives which are completely oxidized on detonation, and this substance exists to the extent of 75 per cent. in dynamite and 30 per cent. in cordite, besides being present in smaller proportions in many of the blasting gelatins. Carbon monoxid is produced as the result of the use of a large series of explosives, such as gunpowder (whether in the form of rifle powder, "cocoa powder," or blasting powder), gun cotton (either by itself, or as cordite, of which it forms 65 per cent.; smokeless powder, which is 98 per cent. gun cotton with 1 per cent. of acetone and 1 per cent. of moisture, etc.; or the blasting gelatins), and ammonal, the latter of which is used extensively and in enormous quantities. The fulminate in the detonators also liberates carbon monoxid in small amount. It is the carbon monoxid thus produced, and produced in these high proportions and enormous quantities, which is absorbed in the chalk and forced into the fissures, either existing naturally or resulting from the explosion of the charges that have been laid, that is being constantly encountered by those engaged in the work of the various tunneling companies, and which frequently results in the occurrence of cases of gas poisoning of this specialized nature. Owing to the gas being contained in cracks among the chalk it is found in what are described by the miners as "pockets" and owing to this fact in many instances the gas is liberated too suddenly for the men to notice any alteration in the behavior of the test animals (mice or canaries) that they have with them before they are themselves beginning to be affected.

Rickets in Germany: Effects of War on Children.—Engel says that only in the very latest period of the war did weakly children under weight begin to appear in greater number. The average of weight of new-born children, as observed in the lying-in hospital, was then reduced. The general health of infants was good, the mortality rate low. The number of births had fallen sharply, a circumstance which always reacts favorably on infant mortality. In addition to this, chiefly in consequence of the shortage of cow's milk, and encouraged by a special grant from the state, breast feeding became more prevalent. The mortality rate of infants was permanently reduced. The position of children between two and five years of age, however, became more and more unfavorable. In spite of the fact that their number also fell, and, therefore, other things being equal, their prospect of life became better, the mortality rate did not fall, but from 1915 on practically reached the infantile mortality rate and even exceeded that of 1918. In normal times the mortality of the children from 2 to 5 years old was not half as great as that of infants. When the statistics are examined, it is seen that the increased number of deaths are not referred to the infectious complaints, but to inflammation of the lungs, but in reality the increase of deaths of rachitic children was the result of respiratory insufficiency, or "inflammation of the lung," and which makes it probable that the high mortality of little children is really to be ascribed to rickets.

Schick Reaction for Determination of Susceptibility to Diphtheria.—In Leete's experience the Schick test appears to be of definite value in detecting diphtheria susceptibles, and as such has many possible applications. It is easy to perform and free from any danger. A reliable toxin and careful technic are essential. Once the difference between a positive and a pseudoreaction are appreciated, reading is easy, but if there is any doubt, controls of heated toxin should be used. The best times for reading are twenty-four hours, three days, and ten days after the test.

Medical Journal of Australia, Sydney

Dec. 13, 1919, **2.** No. 24

Bacteriology of Influenzal Pneumonia. A. H. Tabbutt.—p. 499.
*Case for Diagnosis (Thomsen's Disease?). A. W. Campbell.—p. 506.

Thomsen's Disease?—Campbell reports the case of a man, aged 27 years, who for ten or eleven years had shown apparently remarkable muscular development, but whose real muscular power was slight and subject to easy fatigue, whose every movement was hampered and impeded by "intention rigidity" and tendency to tonic contraction, and whose muscles were unduly firm in relaxation and show an alteration of electrical excitability, suggesting the myotonic reaction. In these respects the clinical picture fitted Thomsen's disease. It was incomplete, however, inasmuch as the marks of familial and congenital origin were wanting.

Dec. 20, 1919, **2.** No. 25

Antimalarial Work with Australian Mounted Division in Palestine. Its Relation to the Same Problem in Australia. W. Evans.—p. 526.
Three Cases of Bilharziasis Treated with Tartar Emetic. N. H. Fairley.—p. 529.

Dec. 27, 1919, **2.** No. 26

Interaction between War, Profession of Medicine, and Practitioner. R. S. Skirving.—p. 548.
*Brain Weight in Congenital Mental Deficiency. W. A. Limb.—p. 551.

Jan. 3, 1920, **1.** No. 1

Results and Treatment of Suspensory Apparatus of Female Pelvic Organs. T. G. Wilson.—p. 2.
Abolition of Drainage Tube in Operative Treatment of Hydatid Cysts. W. J. Stewart.—p. 6.

Brain Weight in Congenital Mental Deficiency.—The figures presented by Lind show that whatever significance the brain weight may have in the sane, it possesses no indicative value when applied to those born insane, who had brain weights ranging in this series from 115 to 1,680 gm. The weights recorded are those of the brains of 142 congenital mental deficients.

Journal of State Medicine, London

January, 1920, **28.** No. 1

Influence of Town Planning on Tuberculosis. P. Abercrombie.—p. 1.
Tuberculosis Colonies and Their Management. P. C. Varrier-Jones.—p. 12.

Naval Medical Association Bulletin, Tokyo

October, 1919, No. 26

*Mucor Isolated from Feces of Beriberi Patients. S. Kiyosaki.—p. 1.
*Quantity of Diastase in Normal Urine. E. Saigusa.—p. 1.

Mucor Isolated from Feces of Beriberi Patients.—Kiyosaki examined the feces of thirty beriberi patients. In ten instances he found the identical mucor. Injected into frogs, pigeons, guinea-pigs and rats, it caused toxic effects, producing, especially in frogs, symptoms resembling motor paralysis.

Quantity of Diastase in Normal Urine.—The urine of 114 persons was examined by Saigusa by the one-half hour method of Noguchi and Wohlgemuth. The quantity of diastase thus determined varied from 8 to 64, in the majority of cases ranging from 16 to 32. It had, to a certain extent, a relation to the specific gravity of the urine. The starch paste used by Saigusa in his experiments was prepared from official potato starch by heating it for a certain time to destroy amylopectin contained in it, and then passing it

through a filter. The author claims that this starch paste could well take the part played by the soluble starch of Kahlbaum in this experiment.

Sei-I-Kwai Medical Journal, Tokyo

August-September, 1919, **38**, Nos. 8-9

*Perfusions of Respiratory Center in Turtles: Effect of Calcium, Potassium Chlorid and Magnesium Chlorid. K. Tsugane.—p. 37.
Cardio-inhibitory Action of Magnesium Chlorid on Turtles. K. Tsugane.—p. 39.
Infantile Scarlet Fever. T. Nomura.—p. 40.

Effect of Calcium, Potassium Chlorid and Magnesium Chlorid on Respiratory Center.—Perfusing the respiratory center of a turtle with a mixture of sodium and calcium, or sodium and potassium salts, and also magnesium, only showed that the effective action of the respiratory center was greatly increased, but if a physiologic quanity of potassium salts was added to an isotonic sodium chlorid solution and this mixture was perfused, examination of the respiratory center did not reveal an increased effectiveness. In thirteen cases comparison was made with the 0.7 per cent. magnesium chlorid solution. There was immediately quickening of rhythm in the heart, but the same experiments showed that the application of magnesium chlorid solution to the respiratory center causes immediately abolition of the functions of the medullary center.

Annales de Médecine, Paris

December, 1919, **6**, No. 5

*Meningococcemia. P. Ribierre, P. Hébert and M. Bloch.—p. 341.
*Meningeal Reactions with Uremia. H. Roger.—p. 369.
*Periodic Paralysis. G. Guillain and J. A. Barré.—p. 386.
*Experimental and Critical Research on Pneumothorax. E. Rist and A. Strohl.—p. 393.
Recent Literature on the Pathology of the Ramifications of the Bundle of His. C. Esmein.—p. 415.

Meningococcemia Without Meningeal Symptoms.—Ribierre and his co-workers state that they have recently encountered several cases of prolonged intermittent fever for which the meningococcus was responsible. Five complete case reports are given and two others without bacteriologic control. The chills and fever are of the malarial type, eruptions are constant, as also pains in muscles and joints during the febrile periods, frequently accompanied by redness and swelling around the joints. In nearly every case the cocci finally invade the meninges, the tardy meningitis in some cases first giving the clue to the nature of the disease. In three of the cases reported the interval was one, two and three months from the first symptoms, but intraspinal serotherapy then proved promptly effectual and cured at the same time the general infection. Lumbar puncture long before had yielded a limpid and sterile fluid, but it contained 0.3 or 0.4 per cent. albumin with moderate leukocytosis and abnormally large proportions of polynuclears. The fluid was also of this type in another case in which the meninges seemed to escape entirely, although the febrile meningococcemia persisted for four months. The cocci were isolated from the rhinopharynx as well as from the blood, and the onset of the disease was that of frank septicemia. There was no epidemic at the time, the cases occurring between November and April. In one of the two fatal cases there was tardy localization of the meningococci in the endocardium. The eruptions may be purpuric, papulous or nodular. The experiences related emphasize the importance of identifying the exact strain of meningococci involved, and giving this specific serotherapy, using a polyvalent serum until this is possible. In these cases scarcely any benefit was apparent from the antiserum until the strictly specific antiserum was used. They advise five injections at twenty-four hours intervals, alternately subcutaneous and intramuscular; if improvement is not observed in the following days, they give it by the vein, and in case this fails, inject it into the spinal cavity, regardless of whether there are meningeal symptoms or not. The patient should be kept under observation for at least a month after the supposed cure as there may be a tardy relapse. The nasopharynx should be examined for meningococci and, if found, the antiserum in powder form should be insufflated. In one of the cases, treatment was with neoarsphenamin by the vein, with recovery after 1.65 gm. had thus been injected in the course of a month. The Wassermann test was negative. No benefit from this drug was apparent, however, in any of the other cases. In rebellious cases others have reported good results with autovaccines and revulsion by a turpentine abscess.

Uremic Meningeal Reactions.—Roger presents evidence to show that the meningeal reactions which develop in the course of uremia do not seem to be directly caused by the retention of nitrogen. They are usually the results of intercurrent cerebral complications, hemorrhage and softening, for which the kidney sclerosis is only indirectly responsible. Cerebral hemorrhage was found by Frerichs in 11 of 292 uremia cadavers, and 3 in 112 by Rosenstein. Canti has recently published 3 cases of cerebral hemorrhage or softening with azotemia of 0.9 to 1.5 gm. per liter. Meningeal hemorrhage is not exceptional with chronic kidney disease. The latter raises the blood pressure until some vessel ruptures. This explanation of the meningeal reactions in uremia as mechanical rather than toxic, would be verified oftener if the cerebrospinal fluid was examined more carefully at necropsies. Slight xanthrochromia may escape detection unless the tube is inspected lengthwise, but this proves the presence of blood, thus adding a fourth type to the three biologic types of uremic meningeal reactions, those with hyperalbuminosis, those presenting merely hypercytosis, or both combined. Acute infectious meningitis in a patient with uremia is often mistaken for uremic meningitis. The pneumococcus is usually involved, but syphilis and tuberculosis may likewise be responsible. In one such case, with positive Wassermann reaction, the convulsions subsided after lumbar puncture, but the headache and torpor did not improve until under treatment for syphilis. When the uremia alone can be incriminated for the meningitis or meningeal condition, the spinal fluid may show merely cytologic and chemical reactions without clinical manifestations, or these reactions may be encountered in the course of neuro-uremia, febrile or not, with headache, vomiting, convulsions, stiffness of the back of the neck, Kernig sign and contracture of the spine. But Roger insists that most of these symptoms are the work of the azotemia rather than any special injury of the meninges. The urea poisons the cortex. He had one case in which extreme retention of sodium chlorid alone, without uremia, was responsible for convulsions, etc. To prove the various points in his article, he cites numerous concrete examples from his own and others' experiences.

Periodic Paralysis.—Guillain and Barré report the case of a soldier of 36 who had paralysis of the arms come on nearly every night, about 2. There is no pain and no paresthesia, but the patient is unable to lift even the bed clothes. By 7 or 8 the paralysis passes off, and his muscles keep normal during the day. Only occasionally, when writing, he has to stop as his arms and legs feel heavy, but walking around a bit restores normal conditions. He has noted symptoms of the kind for sixteen years, but the actual paralysis did not develop until in the trenches in 1915. The attacks of paralysis vary widely in intensity, and during the severer ones the electric excitability of the muscles and nerves disappears completely. The muscles innervated by the cranial nerves never showed a trace of paralysis during the several months the man was under observation. The tendon reflexes disappeared during the severer attacks, but the skin reflexes showed no modifications, and there never were any sensory disturbances. There was no history of malaria, and although the Wassermann reaction was positive in the blood on two occasions, they are inclined to doubt its pathogenic importance here. The spinal fluid shows no sign of neurosyphilis, and no benefit was realized with tentative specific treatment, nor from strychnin, epinephrin, camphor, repose, etc. There seems to be some intermittent intoxication, some poisons of unknown origin accumulating during the intervals, and then acting on certain peculiarly susceptible nerves.

Capacity of the Pleural Cavity.—Rist and Strohl comment on the extreme variability of the curves when the quantities

of gas introduced into the pleura for artificial pneumothorax are compared with the corresponding intrapleural pressure as abscissa and ordinate. The variability depends on the elasticity of the lung, permitting the spreading apart of the sheets of the pleura. A sudden drop in the pressure curve is a sign of sudden increase in the capacity of the pleura, entailed by the breaking of adhesions. The pleural cavity is not a space with rigid walls.

Presse Médicale, Paris

Dec. 27, 1919, **27**, No. 80

*Inaugural Lecture of Operations and Apparatus Course. P. Duval. —p. 801.
*Aspiration during Operations. H. L. Rocher.—p. 806.
Anatomy of Snapping Hip. A. Mariau.—p. 807.
*By-Effect with Mercuric Cyanid. L. Renard.—p. 808.

French Surgery During the War.—In the course of this opening lecture of the "operations and apparatus course," Duval says of the Carrel method that it represented immense progress at the time of its introduction, restoring confidence when despair at the impotence of surgery was almost universal. But the Carrel method is based on two errors, the assumption that a wound after it has been cleared of devitalized tissues requires disinfection; in reality the sound tissues are perfectly competent to cope with the few microbes left, provided--and this was Carrel's second mistake--that there are no streptococci in the wound. He merely counted the bacteria, paying no heed to the species. It was Henri Gaudier, he says, who blazed the way for the successful treatment of war wounds, proclaiming that all devitalized tissue must be cleared out, but that when this was done, then the wound could be safely sutured. Tissier showed that this was true only in the absence of the streptococcus; by excluding or waiting for the disappearance of the streptococcus, then wounds can be confidently sutured. To France, Duval reiterates, belongs the honor of discovering the importance of the biology of the wound: the toxicity of crushed, devitalized tissues, the excision of all such, and the primary suture at once or a few days later when the wound has been cleared out and absolutely protected against contamination. The French also proclaimed that wounds anywhere in the body, even in the lungs, should all be treated on these same principles.

Illumination and Aspiration During Operations.—Rocher expatiates on the importance of a forehead electric light for all operating on cavities, and the importance of continuous vacuum aspiration during operations with which hemorrhage is liable. He uses for the purpose an electric pump designed for compressing air for therapeutic hot air jets. He holds the aspirating cannula in his left hand, sucking up with it all blood, pus, and other secretions, while the right hand wields the curet or other instrument, or an assistant manages the vacuum aspiration. Several cannulas are kept ready in case one gets blocked. He has found this aspiration cleansing of the wound especially useful in operations on bones, on the face and jaws, and on the throat and palate. A minor advantage of the aspiration is that it materially reduces the number of sponges needed at operations.

Mercuric Cyanid by the Vein.—Renard calls attention to the subjective odor of bitter almonds which is sometimes experienced as mercuric cyanid is given by the vein. He now warns patients to expect it.

Jan. 3, 1920, **28**, No. 1

*Esthetic Laparotomy Incision. F. Jayle.—p. 1.
Advantages of Filiform Drainage for Chancroidal Bubo. A. Floquet. —p. 5.

Esthetic Gynecologic Incision.—Jayle expatiates on the advantages of a small transverse incision, to one side of the median line, for access to the adnexa on one side and for removal of the "cold" appendix, under general anesthesia. He gives twenty-four views of the various steps of the operation. It takes a little longer than with a larger incision, and the surgeon has to work with fingers and forceps, and cannot introduce his hand. But the lack of a disfiguring scar and the advantage for the patient of this reduction to the minimum of intraperitoneal manipulations counterbalance this. He has been able to resect the tube from the other side as well, without enlarging the incision, and even to resect nine tenths of the other ovary.

Progrès Médical, Paris

Dec. 27, 1919, **34**, No. 52

The Three Forms of Shock: Nervous, Hemorrhagic and Toxic. R. Dupont.—p. 519.
General Etiology of Dyspepsias. F. Ramond.—p. 521.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Dec. 25, 1919, **49**, No. 52

*Precipitation Serologic Test for Syphilis. B. Galli-Valerio.—p. 1977.
*Volvulus as Complication of Appendicectomy. G. Dardel.—p. 1980.
*Gap in Transverse Mesocolon. Stocker-Dreyer.—p. 1985.
Venereal Disease in Swiss Army. W. R. Schnyder.—p. 1988. Conc'n.

Precipitation Test for Syphilis.—Galli-Valerio declares that his findings in 241 cases confirmed the great value of Sachs-Georgi precipitation test with cholesterolized organ extracts in the serodiagnosis of syphilis. As the technic is improved, he thinks it will supersede the Wassermann test almost completely as it is so simple and easy. The findings paralleled those of the Wassermann test in 77.59 per cent., and in some of the discordant cases, the effect of treatment had modified the response. The organ extract is made with 100 c.c. of an alcoholic extract of beef heart (1 gm. of heart to 5 c.c. of alcohol); 200 c.c. of alcohol, and 13.5 c.c. of a 1 per cent. alcoholic solution of cholesterol. When ready to use, one part of this extract is mixed with one part of 0.85 per cent. physiologic solution, agitated, and four parts of the latter are added. The serums to be tested should be fresh and clear and should be inactivated by heating for half an hour at 55 or 56 C. To 1 c.c. of the serum to be examined, diluted ten times with the 0.85 per cent. saline, is added 0.5 c.c. of the extract diluted as stated above. The whole is well mixed and incubated at 37 C. for two hours and then kept for twenty, twenty-four, forty-eight hours at room temperature, after which the findings are recorded. Meyer suggests that the interval can be shortened by centrifuging the tubes after three or four hours' incubation. The flocculation and precipitation can be estimated by placing the tubes slanting on the black background of a Leitz dissection microscope, and examining with a No. 8 glass. This renders an agglutinoscope unnecessary.

Volvulus as Complication of Appendicectomy.—Dardel removed the appendix in a girl of 8 with threatening symptoms, but the peritoneum was found intact. The appendicitis was of the so-called catarrhal type. There were no adhesions, but four weeks later the last loop of the ileum became twisted and gangrenous. All the cases on record of post-appendicectomy volvulus with gangrenous loop terminated fatally with one exception besides the case here reported. The diagnosis in this case was unmistakable but the general condition was so good that the child was kept under observation for several hours. The circumstance that in seventeen hours the bowel was found gangrenous and on the point of rupture, emphasizes anew the danger of delay. The case teaches, he says, the inadvisability of removing the appendix for purely prophylactic purposes, and it also teaches that when abdominal disturbance follows appendicectomy, it should not be ascribed as a matter of course to errors in diet. The earlier the diagnosis, the better the outlook for these tardy complications of appendicectomy.

Gap in Transverse Mesocolon.—The retrospective diagnosis was that an old gastric ulcer had in time entailed stenosis of the pylorus and adhesions to the pancreas and the mesocolon. The traction on the latter had caused it to atrophy, and in lifting a basket of washing a sudden violent pain gave notice of a tear in the mesocolon. A loop of intestine slipped at times through the gap, with transient occlusion, but this spontaneously corrected itself several times. The opening was large enough for the circulation in the loop to proceed unhindered for a time. Conditions gradually became aggravated, but after a gastro-enterostomy and suture of the gap in the mesentery the extremely emaciated patient recovered and has called her health perfect during the nine years since.

Chirurgia degli Organi di Movimento, Bologna

December, 1919, **3**, No. 5-6

*Collateral Circulation in the Limbs. G. Bolognesi.—p. 413.
*Hernia of Muscle. G. Ferrarini.—p. 435.
*Deformity of Shoulder Resembling Coxa Vara. E. Angeletti.—p. 513.
Trophic Changes in Amputation Stumps: 650 Cases. F. Delitala. —p. 535.
*Tuberculous Process in Hip Joint and Congenital Luxation. U. Cesarano. —p. 549.
Ligation of Femoral Artery for Aneurysm. B. Nigrisoli.—p. 561.
Treatment of War Wounds of Joints. F. Caccia.—p. 562.
Case of High Scapula. F. Putzu.—p. 578.
*Cast for Fractured Humerus, Immobilizing the Shoulder. D. Taddei. —p. 587.
*Prosthetic Appliances, Especially for the Arm. A. Serra.—p. 593.

Development of Collateral Circulation.—Bolognesi reviews what has been written on this subject in recent years and the experimental research in Italy by Porta, Talma, Stefani, Orecchia and Fichera since 1845. He then gives the roentgen findings in the circulation in six dogs killed from four to ninety days after ligation of the external iliac artery. The abdominal aorta was injected with a contrast suspension of 60 parts minium in 60 parts liquid petrolatum and 30 parts oil of turpentine. In comparison with the intact side, all the vessels below the ligature were found larger and they had more ramifications. The direct lateral circulation was insignificant and of tardy development, while the indirect lateral circulation developed to a remarkable extent, bridging the gap in the artery. His illustrations show this bundle of bridging vessels, numbering twenty-seven in one of the dogs and a still larger number in another. The ligated artery in one finally regained partial permeability. The entire circulatory tree had increased generally in size below the ligature, ensuring resumption of arterial circulation in an almost perfect manner. Persons with a particularly well developed sciatic artery seem to be more liable to develop satisfactory collateral circulation after ligation of the external iliac, as conditions thus resemble more closely the conditions in the dogs in his experiments.

Hernia of Muscle.—Ferrarini analyzes the extensive international literature on hernia of muscle, and describes his own experimental research on myocele and a personal clinical case in which the tumor in the thigh had been noted for seven years. There had been some pain at first after a sudden muscular strain which had evidently caused the hernia. Later the tumor was tender, but the man paid no attention to it until he noticed that it seemed to be growing larger. An operation was done on the assumption of a lipoma, but the tumor proved to be the belly of the rectus muscle. Some of the fibers had been torn across and had retracted, and a cyst had formed in the gap. The clinical picture therefore of a myocele may differ widely according to the pathologic conditions encountered and the site.

Varus Deformity of the Shoulder.—Angeletti discusses the findings in five clinical cases and some anatomic specimens in which there was deformity of the shoulder corresponding to coxa vara in the hip joint. It was of traumatic, inflammatory or rachitic origin, or occurred in a cretin or from chondrodystrophy. The roentgen findings in his clinical cases are reproduced.

Congenital Dislocation of Hip Joint and Tuberculosis.—Cesarano relates that among the 2,000 cases of congenital luxation of the hip joint at the Rizzoli Institute there were two cases in which the operation for correction of the deformity, or casual trauma, was followed by rapid development of a tuberculous process in the joint, although there had been nothing to suggest tuberculosis in the child before. In one, the deformity was bilateral, but the right joint had required more forcible and repeated correction, and the tuberculous process developed in this joint. The child came from a tuberculous family, but roentgenography had shown apparently normal conditions before the intervention. The process had developed in the older child after a trauma, nine years subsequent to the correction of the deformity. Only a few such instances are on record, he says, and the fact that tuberculous processes only exceptionally follow the stress of correction of congenital luxation of the hip joint, testifies anew that trauma alone is not able to induce a tuberculous process in a healthy subject. With inherited or acquired taints, even slight trauma, even any transient overuse of the part, or prolonged morbid congestion may be enough to induce the localization of a tuberculous lesion.

Plaster Cast for Immobilization of the Shoulder.—Taddei extols the advantages of the right-angled or square plaster frame which holds the arm on a level with the shoulder, the forearm on the same level or sloping downward. The findings after healing show fine anatomic, functional and radioscopic results. The patients do not object to the square frame after the first.

Artificial Hands and Arms.—Serra discusses what has been done in the line of prosthetic appliances in Italy and elsewhere in the last two or three years, giving forty-three illustrations and the indications for the different types of artificial limbs and working hands.

Policlinico, Rome

Dec. 7, 1919, **26**, No. 49

*Symptomatology of Meningitis. E. Fossatara.—p. 1445.
*Sterility. A Brun.—p. 1449.
Quinin in the Prophylaxis of Malaria. F. Paoletti.—p. 1458.
Income Limit for State Insurance against Sickness. L. Verney. —p. 1469.

Symptoms of Meningitis.—Fossataro reports the case of a man of 37 who suddenly began to cough and expectorate, with fever, headache and vomiting. Râles were found at the base of the right lung, and the back of the neck was stiff. The meningococci found in the spinal fluid had evidently invaded the lungs and cerebral meninges simultaneously; the course was distinguished by torpor throughout, the man dying the third month. The spinal meninges did not seem to have been affected. The loss of balance and tendency to fall had suggested a tumor in the cerebellum but vision was normal, except for strabismus. The torpor was evidently the result of the hydrocephalus in the ventricles which was also responsible for the lack of control of the sphincters. Necropsy revealed merely purulent leptomeningitis of the lower surface of the cerebellum with hydrocephalus, ventricular and also intermeningeal, at the base of the brain.

Causes of Sterility.—Brun analyzes 300 cases of sterility in women from his practice at Trieste. In 230 cases the women had never conceived; in seventy cases the women had already gone through an abortion or pregnancy. His experience confirms anew the importance of patience and perseverance in measures to correct the congenital or acquired defects impeding conception. The genitals were apparently normal in thirteen of the 230 cases of primary sterility; in 107 there were congenital defects, in 102 inflammatory processes were responsible, and fibroma in eight.

Dec. 14, 1919, **26**, No. 50

Atypical Forms of Typhoid Fever. E. Mondolfo.—p. 1475.
*Bacteriologic Diagnosis of Shiga Dysentery. A. Petrucci.—p. 1483.
Stab Wound of Gravid Uterus. P. de Tommasi.—p. 1486.
The Housing Problem. A. Filippini.—p. 1487.

Stab Wound of Gravid Uterus.—The woman was at the eighth month when a stab wound pierced the wall of the uterus and amniotic fluid escaped. The laparotomy showed the fetus visible through the 3 or 4 cm. wound. De Tommasi merely sutured the wound, and in a few days the woman was delivered of a healthy child and left the hospital in good condition. Delivery was hastened with forceps, to avoid too much strain on the recent sutures.

October, 1919, **26**, Surgical Section No. 10

Traumatic Aneurysms of the Limbs. T. Laurenti.—p. 313.
*Cinematization of the Jaw. R. Avanzi.—p. 330.
Critical Review of Treatment of Compound Fractures from War Wounds. R. Bompiani.—p. 336. Conc'n.

Cinematization of the Jaw.—Avanzi relates that Pellegrini, in discussing motor plastic amputations recently, suggested that it might be possible to form loops in the muscles after amputation of the lower jaw which might serve for vitalization of the prosthesis, as after motor plastic amputations of the leg. Avanzi reviews the various elements that would be

necessary for such intervention, and especially the cooperation of the surgeon and the mechanic or, better yet, the double training in one person.

December, 1919, **26**, Medical Section No. 12

*Serodiagnosis of Echinococcus Disease. A. Gasbarrini.—p. 441.
*Rhizomelic Spondylosis and Osteomalacia. N. Pende.—p. 446.
*Spontaneous Nystagmus. G. Bilancioni and A. Romagna-Manoia. —p. 461.

Serum Test for Echinococcus Disease.—Gasbarrini applied the test by the intradermal technic and obtained a positive response in all his twelve cases of hydatid cyst, except in one case in which the cyst had suppurated and thus had ceased to be "active." He commends the ease and harmlessness of the test. It is made with serum from bovine hydatid cysts, filtered; after addition of one drop of phenol to 20 c.c. of the fluid it is set on ice. It keeps active for about a month. Giani obtained satisfactory results also with the Abderhalden test applied to human and bovine serum from subjects with echinococcus disease, and it was positive in seven of Gasbarrini's twelve cases. After surgical intervention the intradermal reaction veers to negative.

Rhizomelic Spondylosis and Osteomalacia.—Pende gives an illustrated description of a case of this combination in a woman of 48 who had had several attacks of articular rheumatism in the last eighteen years. Nothing can be found to indicate any special endocrine disturbance. The associated osteomalacia throws light on the etiology of the rhizomelic spondylosis, as it suggests a common origin in a trophoneurosis of bones and joints. It is localized in this case in the inferior cervical and the lumbosacral metameres and the adjoining joints and corresponding joints in the limbs. The prevailing views on spondylosis are analyzed and compared.

Spontaneous Nystagmus.—The present status of our knowledge on this subject is presented by Bilancioni and Manoia who noted spontaneous nystagmus in 150 of 3,000 aviation candidates. There was nothing otherwise to suggest pathologic conditions in the labyrinth, but there were always signs of functional disturbance in the nervous system, exaggerated reflexes, dermographism, tremor, etc. Many were accepted and passed satisfactorily through the course of training. The details are given of 4 cases of pure spontaneous nystagmus, and of 8 with heart, kidney or nervous disturbances, also in 2 cases after a fall while flying, and in 2 cases in which there was a history of an old healed otitis media. In 3 others the tests revealed abnormally long reaction to visual and auditory stimuli. They take up in turn the various hypotheses advanced to explain nystagmus. Their conclusion is in favor of some causal functional disturbance in the centers which control the movements of the eyes, this disturbance being probably of embryonal origin and located in the center itself or the cortex or connecting nerve fibers, and consisting in the lack of normal balance between the acting and antagonist elements. The nystagmus occurred only when the eyeballs were rotated to the farthest limit.

Crónica Médica, Lima, Peru

September, 1919, **36**, No. 675.

*Treatment of Trigeminal Neuralgia. M. Sixto Chavez.—p. 299.
*The Psychology of Insanity. H. F. Delgado.—p. 316.
*Emergency Splenectomy for Rupture. E. P. Manchego.—p. 327.

Trigeminal Neuralgia.—Chavez reviews the broad field of measures that have been recommended for treatment of trigeminal neuralgia for which no cause can be discovered. In one case he cured supra-orbital neuralgia of three months' standing in a student by application of electricity, but the interval since has not been very long. He cites A. Courcelle's success in treating neuralgia by subcutaneous injection of air (1905), but this can scarcely be applied in treatment of the trigeminal form on account of the resulting disfigurement in the face. Pitres of Bordeaux was the first to inject alcohol in treatment of facial neuralgia (1902), and this has now an extensive literature in all countries At the best, however, its effect does not last more than nine months. Chavez reports a case in which the trigeminal neuralgia was not modified in the least by the neurolytic injections of alcohol nor by partial resections of the nerve. This patient was a man of 50 and the neuralgia dated from 1910, although there had been occasionally mild neuralgic pains above the orbit from the age of 23. Year after year the whole array of treatment was applied in turn, including resection of the supra-orbital nerve. Retrogasserian neurotomy is the only resource now in this case, and he gives the minute details of the technic for this and the comments of various authors on this section of the sensory root of the nerve by Frazier's technic. (Published in THE JOURNAL, May 11, 1918, p. 1345.) Chavez describes further a case in which this operation was attempted for neuralgia of ten years' standing, refractory to all other measures. In detaching the meningeal artery from the base of the skull, there was severe hemorrhage which was arrested by ligating the middle meningeal artery. So much blood had been lost and the general condition was so bad in the woman of 62 that the operation was suspended, the patient dying six hours later. In another case the woman of 50 had continued to suffer from the neuralgia after resection of the ophthalmic and the superior and inferior maxillary nerves, and finally the gasserian ganglion was resected (Dr. de la Puente, July, 1917), the first operation of the kind in Peru. The patient died from hemorrhage after the gasserectomy.

Psychology of Insanity.—Delgado remarks that experience has shown the important part played by moral factors in the development of mental derangement; in fact, he deems this the principal factor. The new psychiatry, he declares, is based on psychology, while the textbooks and medical schools lead the student only a few steps into the vast field of psychologic processes. Psychanalysis reveals that mental derangement may be caused by factors of a moral order, moral conflicts, and that the hallucinations, gestures and attitudes of the insane are all important clues for the psychologist, revelations of profound and vital significance for treatment. Of course every psychic process has its molecular concomitant, but Delgado reiterates anew "the priority of the function—the conception which is rejuvenating medicine in all its branches now." "Modern endocrinology is also demonstrating the connection between the psychologic activity and the somatic activity, and the influence of one on the other. Psychanalysis has further shown the importance of organic inferiorities as factors in the psychogenesis of neuroses and psychoses, and in the physiologic estimation of the processes resulting from 'undrained' emotions."

Emergency Splenectomy.—Manchego removed the spleen of a boy of 14 on account of rupture and hemorrhage from a fall. The spleen was much enlarged from malaria, measuring 11 by 7 by 17 cm. and the tear was 8 cm. deep. Splenectomy is a comparatively common operation in Peru. In the case reported the liver began to enlarge the fourth day after the operation. If the tear in the spleen had been lower down, instead of in the upper pole, the boy would probably have bled to death before he reached the hospital.

Semana Médica, Buenos Aires

Oct. 30, 1919, **26**, No. 44

Proposed Reforms in Medical Course. P. J. García.—p. 509.
*Extremely Diluted Tuberculin in Treatment of Tuberculosis. F. Gómez Alvarez.—p. 516.
Origin of Univitelline Twins. M. Fernández.—p. 527.
*Roentgen Treatment of Bone and Joint Tuberculosis in Children. R. Espínola.—p. 533.

Tuberculin Prophylaxis and Treatment of Tuberculosis.—In this third instalment of his report, Gómez gives the details of ten cases of pulmonary tuberculosis systematically treated by the method of extreme dilution of the tuberculin. The bases for this treatment have already been summarized in these columns, as for instance, Feb. 23, 1918, p. 579. All Gómez' patients seem to be clinically cured at present.

Roentgen Treatment of Tuberculous Bone and Joint Disease.—Espínola declares that roentgen treatment is the best of all measures in surgical tuberculosis especially in cities. Surgical measures should be only secondarily considered. His experience with it has been very favorable, especially when the effect can be supplemented with heliotherapy and mountain or seaside climate.

Siglo Médico, Madrid

Dec. 13, 1919, **66**, No. 3444

'Emotion. Ramón Turró.—p. 1073.
Personal Prophylaxis of Venereal Disease. E. Mañueco Villapadierna. —p. 1076.
Treatment of Gonorrhea in the Female. Sicilia.—p. 1079.
Vaccine or Tuberculin Treatment of Tuberculosis? R. Villegas. —p. 1080.

Emotions and Endocrinology.—Turró explains the psychic by the physiologic basis on which it rests, not the physiologic by the psychic, as is the general rule. 'Achúcarro's assertions in regard to an internal secretion of the neuroglia and Marañon's demonstration that the brain can influence the vegetative life in two ways, by both nerves and blood, have thrown much light on the question of emotions. Marañon has demonstrated that it is possible to induce all the phenomena of fright, such as pallor, dilatation of the pupils, acceleration of the heart beat, goose flesh, sweating, etc., without the intervention of the brain, merely by injection of epinephrin in the artificially hyperthyroidized or in subjects with latent hyperthyroidism.

Mitteilungen a. d. med. Fak. d. kais. Univ., Tokyo

Dec. 28, 1918, **20**, No. 4. Rec'd Dec., 1919

Physiologic Actions of Fish Poison: Fugutoxin. F. Ishihara.—p. 375.
The Albumin in Horse Serum before and after Immunization with Diphtheria Toxin. K. Sakaguchi, L. Hayashi and B. Tanabe.—p. 427.
*Research on Diabetes: II, III and IV. K. Sakaguchi.—p. 439.

Research on Diabetes.—Sakaguchi presents here his second, third and fourth reports on his exhaustive study of various features of diabetes. In the second he discusses why the tolerance of diabetics is the lowest at breakfast and the elimination of sugar the highest after this meal. His conclusion is that this is due to the fact that the production of glycogen is less after breakfast than at other meals. The elimination of sugar after breakfast can be reduced by giving a little carbohydrate or meat an hour or two before the breakfast. He states further that carbohydrates to the limit of tolerance are borne better if taken four or five hours after the preceding meal. When the interval is six hours or more, the glycosuria may be increased.

In his third communication he presents clinical evidence to show the injurious action of emotional stress on the sugar content of the blood, while brain work, without emotional disturbance, does not modify the glycemia. In the three cases described, the sugar content of the blood was determined before and after the patients had been informed of the serious nature of their disease. Diabetics should avoid occupations, he suggests, that entail worry or excitement.

The fourth communication discusses the influence of intake of albumin on the sugar content of the blood. As the considerable rise in the sugar content reaches its highest point in from two to four hours after eating meat, it seems to be due to the products of digestion in the small intestine, rather than to the products of putrefaction of albumin in the large intestine.

Deutsche Zeitschrift für Chirurgie, Leipzig

February, 1919, **148**, No. 5-6

*Differential Diagnosis of Gas Gangrene. Stemmler.—p. 289.
Prophylaxis of Gas Infection. Remmets.—p. 325.
*Ligation of Femoral Vein in Treatment of Infected Wounds Below. J. Ritter v. Winiwarter.—p. 333.
Gluteal Aneurysms. F. Krische.—p. 352; Id. Goldammer.—p. 374.
*Goiter Operations. O. Orth.—p. 360.
*Covering Defects by Temporarily Suturing to Other Limb. J. F. S. Esser.—p. 385.
Chronic Gastric and Duodenal Ulcer. A. Troell.—p. 404. Cont'd.

Differential Diagnosis of Gas Gangrene.—Stemmler emphasizes that there can be no hope of successful serotherapy of gas gangrene until we learn to differentiate it. Various kinds of lesions are now grouped under this heading. Typical gas gangrene is a general intoxication from infection of muscle tissue by anaerobic bacteria; the muscle tissue is destroyed by ischemia, never by putrefaction, as gas gangrene is not a putrefaction process, and should never be classed with such. There are two forms of typical gas gangrene, the bronze phlegmon and the epifascial form. Malignant edema belongs in this category of inflammation from gas and edema-forming bacteria, although it is, not of the true gangrene type. The two other categories of wound infection are inflammation from the pus formers, and inflammation from the putrefaction producers with formation of gas.

Stasis Hyperemia by Ligation of Femoral Vein.—Von Winiwarter was unable to obtain reliable results with a constricting band to the thigh in treatment of suppuration in the knee joint, and hence he resorted to ligation of the femoral vein, and reports encouraging results and knows of similar experiences in other hospitals. As the outcome thus surpassed expectations in these severe cases, he is inclined to extend the field of this procedure, and advocate ligation of the femoral artery whenever the fever keeps up for several days after the surgical toilet of the injured knee, and pus is found in the joint. It may be possible by this means to arrest the inflammation, and the lesion may heal without loss of function. As ligation of the femoral vein is a simple and harmless procedure it is justified, he thinks, in every case of severe infectious processes on the legs, in or outside of the knee. He urges others to give the method a trial, citing the details of his eighteen cases. All were war wounds. He applies the stout silk ligature to the vein just below Poupart's ligament, sometimes ligating another large vein besides the femoral. The cyanotic appearance has usually subsided by the next day, but the stasis edema persists. The relief from pain was striking, and even the change of dressings was not painful. The general condition improves, not only from the relief from the pain but from the shutting off of the septic products from the general circulation.

Goiter Operations.—Orth reviews his experience with 300 goiter operations; the mortality was 0.17 per cent. A number of cases showed the close correlation between the various endocrine glands which surgeons have to bear in mind; for instance, one woman first developed goiter after splenectomy. In another woman the goiter developed at once after removal of a myoma, while Wettergreen has witnessed the subsidence of a myoma as exophthalmic goiter developed. Several have reported increase in the size of the thyroid after removal of both ovaries, and Orth had a case in which the woman aborted three days after resection of the thyroid. Such happenings show the necessity for investigation of the genital organs before operating for goiter. In three cases a moderate form of tuberculosis seemed to be whipped up by removal of a goiter which had been compressing the trachea, and the patients soon died. Clairmont has reported some similar experiences with tuberculous patients. The blood pressure was high in 70 per cent. of Orth's cases, and after the thyroidectomy it dropped below normal, but gradually righted itself in a few weeks. No change in the coagulation of the blood was apparent. Transient albuminuria was evident in ten cases after the operation, not before. One patient had a spontaneous fracture of the femur a year after resection of the thyroid, and she died in six weeks. Orth is inclined to ascribe this fragility of the bones to abnormal conditions such as are observed in the bones of thyroidectomized dogs. The displacement of the trachea should be determined with radioscopy before the intervention as a guide to the operation. His only recurrences were in the four cases in which radioscopy had been neglected, and the protrusion of the goiter in the depths was not fully appreciated. He had fatal hemorrhage or embolism in two malignant cases, and in one case the esophagus was injured during the operation as also the trachea in another, but both healed without mishap after suture. Anomalies in the vessels were not infrequent, and this possibility should never be forgotten. In conclusion he warns of the necessity for caution in using disinfectants in this region; some have witnessed the flaring up of latent hyperthyroidism after application of iodized dressings, etc. Another danger from them is the effect on the vocal cords, similar to Cisler's experience with dogs; the vocal cords kept in the cadaver position when their innervation had been cauterized with silver nitrate. After thyroidectomy the vocal cords are liable to keep in the median position for a long time before

they resume normal movements, and any chemicals in the vicinity might exaggerate this.

Plastic Repair of Defects by "Suturing In."—Esser has been very successful with pedunculated flaps from the sound leg in operating on suppurating lesions that refuse to heal. When this technic is not applicable, he applies what he calls *Einnähen*, suturing the freshened defect, after excision of scar tissue, to some point on the sound leg. After it has grown to the sound tissues he cuts out one or two flaps and sutures the other edges to the defect. He gives illustrations of several particularly severe cases that healed under this "suturing in" procedure. None of the patients died.

Deutsche medizinische Wochenschrift, Berlin

Oct. 23, 1919, **45**, No. 43

The Restoration of the German Population. A. Gottstein.—p. 1177.
*Induced Pneumothorax in Lung Disease. K. Henius.—p. 1178.
Endemic of Friedländer Bacillus Pneumonia. Zander.—p. 1180.
*Glucose Injections in Heart Disease. W. Pfalz.—p. 1181.
*Progressive Paralysis. A. Jakob.—p. 1183.
Phototherapy in Lupus. Dora Gerson.—p. 1187.
Epidemic of Microsporia. W. Klehmet.—p. 1188.
Infectiousness of Latent Syphilis. W. Gärtner.—p. 1189.
Upward Displacement of the Diaphragm. C. Schwenke.—p. 1191.
*Myocarditis from Illuminating Gas Poisoning. E. Liebmann.—p. 1192.
End-Results of the Friedmann Treatment of Tuberculosis. R. Mühsam and E. Hayward.—p. 1193.
To Remedy Scarcity of Gas in Laboratories and Hospitals. H. Reiter.—p. 1194.
Proposed Reforms in Medical Course. J. Schwalbe.—p. 1196. Cont'n.

Induced Pneumothorax in Lung Disease.—That indeed pneumothorax marks a distinct advance in the treatment of tuberculosis is the conviction reached by Henius after using it in twenty-four cases. He gives his indications for induced pneumothorax as follows: (1) unilateral tuberculosis with cavity formations, even though the other side shows a mild tuberculous infection, provided it is not progressive; (2) unilateral infiltrating inflammatory processes; (3) unilateral, cheesy pleuropneumonia; (4) hemoptysis, if the side that is bleeding can be ascertained; (5) pleuritis, with much effusion, replacing the fluid with air, and (6) a short trial in cases of unilateral, multiple bronchiectatic areas and a central lung abscess. Henius ascribes the good effects of pneumothorax not to the rest that the lung gets from collapse, but to lymph stasis and to hyperemia, which in turn induce renewed growth of connective tissue and thus initiate a healing process. Lymph stasis doubtless prevents the spread of the disease process and the resorption of toxic substances. Collapse of the lung causes also an abatement of the secretion, and pneumothorax gives the diseased lung an opportunity for healing by shriveling. He quotes statistics from Spengler, Saugmann, Stuertz and Zinn, which go to show that over 25 per cent. of the patients so treated are symptomatically cured, and that from 40 to 50 per cent. more are benefited.

Glucose Injections in Heart Disease.—Pfalz found that infusion of glucose solution, as recommended by Büdingen in various heart diseases in which he postulates cardiodystrophy, affects the subjective symptoms favorably. In many cases he noted also objective evidence of improved heart action. No untoward effects have been observed thus far. Büdingen raised the question whether the nutritive material stored up in the heart and that brought to it by the blood are under all circumstances quite sufficient to enable the heart to perform the work that is expected of it. Büdingen began to consider whether or not in certain cardiac diseases, for example, in coronary sclerosis, the symptoms might be caused in large measure by faulty heart nutrition in consequence of narrowing of the blood vessels. He reached the conclusion that carbohydrates, and more especially glucose, play a larger part in heart nutrition than do protein and fat. The physiologic sugar content of the blood is from 0.07 to 0.11 per cent. (Ivar Bang), which suffices under ordinary conditions. The most important reserve product of carbohydrate metabolism is glycogen, the presence of which in the heart muscle is well known. Büdingen assumes that in certain conditions the heart fails to be adequately nourished, that the reserve of glycogen runs low and thus the heart does not get sufficient nourishment. The resulting cardiodystrophy may be cardiogenic or ectocardiogenic. Coronary sclerosis is an example of the former type, in which both cause and effect lie within the heart. Pathologic conditions of the glands of internal secretion furnish an instance of the ectocardiogenic type, in which the cause lies without and the effect within the heart. Either type of cardiodystrophy Büdingen considers an indication for treatment with from 10 to 20 per cent. glucose infusions. Pfalz has used the Büdingen treatment in a number of cases, and states that he regards it as a valuable procedure. The technic is simple. He infuses a 12 to 20 per cent. glucose solution, prepared from chemically pure glucose tablets, and sterilized before it is used. Ordinarily, from six to ten infusions of from 200 to 300 c.c. each are given at intervals of a week. He gives the infusion at body temperature. He secured the best results in two cases of coronary sclerosis, combined with angina pectoris, with blood pressure only slightly above normal. At the end of the treatment the symptoms (oppression and pain in the chest and arm with suffocation after exertion) had almost entirely disappeared. In three cases of general arteriosclerosis with hypertonia and angina pectoris the infusions proved beneficial, in that the heart symptoms subsided considerably. The infusions raised the temperature in several cases, but normal temperature was promptly regained.

Progressive Paralysis.—The investigations of Jahnel, which showed that ordinarily there were large numbers of spirochetes present in the cerebral cortex of paralytics who had died during an attack, are confirmed by the researches of Jakob and Hermel. The findings of the latter investigators go to show that the exacerbations of the disease, considered from a parasitologic standpoint, constitute very important episodes in the course of progressive paralysis. As the most important results of his investigation, Jakob mentions finding that the mental and motor exacerbations are associated with regressive and progressive phenomena in the fundamental and essential part of the nerve fibers (the axis cylinder), and with severe inflammatory processes in the connective tissue, and infiltration of the pia, the vessels of the cortex and medulla; infiltration of cellular elements into the nerve tissue; collections of lymphocytes; encephalitic processes; occurrence of gummatous changes in the vessel walls, and of miliary gummata in the cerebral cortex. Also endarterial proliferation processes in the vessels of the cortex were noted. Jakob looks on his histologic investigations as furnishing further proof of the correctness of Jahnel's view that the exacerbations of the disease coincide with a vigorous and extensive multiplication of spirochetes. So much, Jakob thinks, must be taken as certain, that in progressive paralysis living spirochetes exert a direct effect on the brain.

It is still a question why paralysis develops in certain syphilitics and not in others, although the observation that it is the syphilitics with very slight defense reactions in whom paralysis appears seems to point toward a solution. Further light on the question is thrown by the observations of Erb and of Fournier that those in whom the infection takes a mild course and who present no specific skin lesions in the secondary stage are more prone to paralysis than are those of whom the converse is true. Jakob's histologic data give the clue to treatment of progressive paralysis. Everything possible must be done to effect a cure of the syphilis, to destroy the remaining foci of spirochetes, and to enhance the production of antibodies. He reports that efforts in this latter line are now under way. He is injecting patients by the vein with inactivated serum from untreated patients in the secondary stage of syphilis with pronounced cutaneous manifestations of the disease, hoping thus to increase the supply of specific antibodies. He is also planning to use cultures of the spirochetes for a similar purpose. As a further reenforcement of the treatment of progressive paralysis and other forms of severe neurosyphilis, he intends to try Knauer's method of injecting arsphenamin into the carotids. [This latter method was described in the *Münchener medizinische Wochenschrift* **66**:609 (June 6) 1910. Even with this, the drug does not seem to pass into the cerebrospinal fluid, but the cell content dropped from 1,600 to 0 in one of the

nineteen patients thus treated. Knauer asserts that his experiments on the cadaver and on animals as well as his clinical experiences have demonstrated that this technic does not entail any considerable danger. He suggests that it might be combined with intraspinal injection of the drug, and that possibly mercury or other drugs might pass more readily than arsenic into the cerebrospinal fluid. He usually injects the drug into the carotid through the skin, without exposing the artery, as the patients are liable to tear off the dressings. The head has to be pendent, to throw the artery into relief. He says that in two of his cases no effect was apparent, but in the others the benefit surpassed that from any other treatment known to him.]

Myocarditis from Illuminating-Gas Poisoning.—Liebmann remarks that the publication of Zondek's studies on the heart findings after illuminating-gas poisoning impel him to publish the present case report. The unusual finding in Liebmann's case, which was that of a woman of 38 who was found unconscious in her bathroom, having been overcome by gas escaping from a gas heater, was a severe interstitial and parenchymatous myocarditis. Liebmann thinks that the symptoms in Zondek's case, the drop in blood pressure, the disturbances of the heart beat, and dilatation of the heart were doubtless the results of similar processes.

Münchener medizinische Wochenschrift, Munich

Oct. 24, 1919, **66**, No. 43

Spontaneous Healing of War Wounds of Nerves. Perthes.—p. 1219.
*Induced Pulmonary Edema. E. Laqueur.—p. 1221.
*Osteochondritis dissecans. P. F. Nigst.—p. 1223.
*Silver Salvarsan Sodium in the Treatment of Syphilis. Rille and Frühwald.—p. 1226.
Neurorelapses after Salvarsan Treatment. O. Sinn.—p. 1228.
Device for the Intravenous Injection of Opaque Solutions. Stühmer.—p. 1230.
Expert Treatment of Tropical Diseases. L. Külz.—p. 1231.
Simple Method for Determination of Wave Lengths of Homogeneous Roentgen Rays. F. Voltz.—p. 1232.
Rib-Cutting Shears. Kehl.—p. 1233.
Significance of the Casein in Parenteral Milk Therapy. F. Müller.—p. 1233.

Experimental Pulmonary Edema.—What attitude does the healthy organism take toward the presence of fluid in the lung? In order to answer this question Laqueur undertook a series of experiments on cats and rabbits. A solution with which osmotic pressure would be especially active was chosen, in order that fluid might be drawn rapidly into the alveoli. He injected 1 c.c. of a 50 per cent. solution of glucose or of a 20 per cent. sodium chlorid solution into the trachea of a rabbit, whereupon edema of the lung shortly began to develop and continued to increase for about an hour, until the weight of the lung was three times the normal. Associated with the osmotic edema in the lung there was exudation into the surrounding serous cavities, especially into the pericardium. In all the fourteen instances of animal experimentation, at a certain period within the first two hours after injection, the hemoglobin content was higher than before the injection, so that it became evident that in osmotic edema, as well as in toxic edema, the blood undergoes inspissation. Through hemoglobin determinations it could be shown that the amount of fluid that passed out of the blood corresponded to the amount of fluid forming the edema. Induced edema of the lung appears, therefore, to be a ready means of not only bringing about changes in blood concentration but also of estimating the amount of such changes. Muscular rest was found to affect very favorably the course and final outcome of the edema. The circulatory disturbances are apparently suffocation symptoms. Respiration was accelerated but less profound, so that the total air inhaled was not changed. Laqueur thinks that the physical findings with such experiments may aid in teaching percussion and auscultation. Resorption in the lung after the injection was extremely rapid. Most of the fluid and of the glucose injected was absorbed promptly, the balance much more slowly. Osmotic equilibrium between the edema fluid and the blood serum was soon established.

Osteochondritis Dissecans.—Nigst remarks that the etiology of the disease of the joints in which pieces of articular cartilage are split off from the ends of joints remaining otherwise intact is not yet fully cleared up, but the results of his radiographic investigations, together with the anamnesis, symptomatology and operative findings in his cases, are in close accord with the findings published by Ludloff in 1908. In view of the uniform, characteristic clinical picture he is inclined to regard osteochondritis dissecans as a distinct morbid entity. The various differences reported by other investigators correspond to the different stages of the same pathologic process. He agrees with Ludloff that the striking similarity in the localization of the lesions must be traceable to a definite disease process. The preliminary stages of the disease are as yet unknown, but if in all cases roentgenograms of corresponding joints were made, comparative studies could be undertaken that would help to throw light on the pathogenesis of the disease.

Silver Salvarsan Sodium in the Treatment of Syphilis.—Rille and Frühwald find that the effect of silver salvarsan on syphilitic symptoms, both clinical and serologic, is more rapid than that of the usual combined neosalvarsan treatment. Much smaller doses, they say, are required than are needed of other salvarsan preparations, which is all the more significant in view of the fact that silver salvarsan contains only two thirds as much arsenic as old salvarsan. In using silver salvarsan one therefore keeps well under the toxic doses. The authors found that as a rule silver salvarsan was well borne by patients; no serious accidents from its use were observed.

Zentralblatt für Chirurgie, Leipzig

Dec. 13, 1919, **46**, No. 50

Clamp with Double Parallel Grasp, for Operations on Stomach and Intestine. R. Sommer.—p. 994.
Technic for Correction of Ischiorectal Fistula. H. Walther.—p. 995.

Dec 27, 1919, **46**, No. 52

*Blocking the Splanchnic Nerve. G. A. Preiss and A. Ritter.—p. 1025.
Epinephrin not Indicated for Prevention of Postoperative Paralysis of the Intestines. Mülberger.—p. 1030.

Blocking the Splanchnic Nerves.—Preiss and Ritter report the application in 89 cases of Kappis' technic for blocking the splanchnic nerve from the rear, reaching it from just below the twelfth rib, at a depth of approximately 7 cm. above the second lumbar transverse process, introducing the needle at the lateral convex margin of the vertebra, and depositing from 10 to 40 cc. of a 1 per cent. procain-epinephrin solution. The patient may be prepared with a sedative the evening before and again half an hour before the operation. Wendling reaches the nerve from the front, 0.5 cm. to the left of the median line and 1 cm. below the xiphoid process, blocking the nerve before it joins the solar plexus. Four reports have been published of experiences with these methods, a total of 254 cases. Preiss and Ritter here state that in their 89 cases there were only 4 so refractory that the operation had to be done under inhalation anesthesia. Cancer involving the nerves was responsible for the failure in 2 of these cases and phlegmonous appendicitis in another case in which the parietal peritoneum was intensely sensitive. The fourth failure was with an ovariectomy; blocking the splanchnic nerves does not anesthetize the ovaries. In 5 other cases a little supplementary inhalation anesthesia was required. In one case the vena cava was punctured and in another the lung. Fifteen different types of operations were performed, including 13 resecting operations on the stomach, 5 gastro-enterostomies, 2 nephrectomies, 1 decapsulation of the kidney, 2 cholecystectomies and a large number of resections of the intestines, jejunostomy, etc. The fluid spreads easily in the retroperitoneal tissues, so that a single injection on each side was all that was needed for the appendicectomies. The results were better when Kappis' solution was modified to the following: 1 c.c. procain; 50 c.c. distilled water; epinephrin (suprarenin) 0.001; sodium chlorid 0.35, and potassium sulphate 1.2 c.c. The anesthesia was so complete that they finally dispensed with the preliminary sedatives as superfluous and even detracting from the anesthetic effect. The youngest patient was 11, the oldest 70. No serious by-effects were noted, no signs of intoxication or collapse, at most occasional nausea and pallor during the

operation, exceptionally a little vomiting. The special field for splanchnic anesthesia, they affirm, is not only for major operations on all the organs of the greater abdominal cavity but also interventions for severe acute peritonitis, as after perforation of a viscus.

Zentralblatt für Gynäkologie, Leipzig

Dec. 6, 1919, **43**, No. 49

*Helminths in Female Genital Organs. F. Tschamer.—p. 989.
*Nasal Diphtheria in the Newly Born. J. Becker.—p. 996.

Helminths in Female Genital Organs.—Tschamer reports a case in which two living specimens of the oxyuris were found in the right tube after total hysterectomy. As the tube was slit, one of the helminths crawled to the mouth of the tube, the other to the fimbriated end and both dropped off. The longest was 12 mm. in length. No ova of the oxyuris could be detected anywhere in the excised mass, but it had been rinsed, and possibly some may have been present at first. The woman had been recently treated with santonin on account of discomfort from itching at the anus and genitals and in the nose. The pinworms probably had found their way from the anus through the vulva and uterus into the tube, but there did not seem to be any pathologic condition for which they could be held responsible. The patient in this case was a previously healthy secundipara of 31 who had had a hydatidiform mole removed in 1909; another in 1919 compelled evacuation of the uterus anew. The genitals were otherwise normal at the time, but five months later she returned complaining of pains in the inguinal region and excessive menstrual hemorrhages, and a nodular tumor was found low in the uterus, apparently a chorio-epithelioma. Tschamer reviews the literature on helminths in the internal genitals; it is evidently a very rare occurrence. He was not able to find any previous record of the penetration of the helminths or ova beyond the vagina and cervix except that Marro reported in 1901 a case in which oxyuris ova were found in a cyst on an ovary.

Nasal Diphtheria in New-Born Infants.—Becker states that at the Jena maternity there were five cases of nasal diphtheria in new-born infants in 1918 and four in 1919. He warns that bacteriologic examination is indispensable for every case of coryza in a young infant and above all when the discharge from the nose shows traces of blood. In one case the nasal diphtheria entailed general sepsis with mixed infection and necrosis of the arm. The snoring breathing is the first symptom to attract attention, and then the thin, slightly purulent discharge running from one or both nostrils. It is often reddish or brownish, and erodes the upper lip. The membranes are generally far back in the nose, but can be easily removed. Becker ascribes the infection to carrier visitors as the most probable source. On this account it is now the rule not to give the child to its mothers to nurse during "visiting hours," and no outsider is allowed in the infants' ward. In a recent compilation of thirty-eight cases the mortality was 31.6 per cent., mostly from complications. In another case the diphtheria settled in the cord.

Dec. 13, 1919, **43**, No. 50

*The Other Tube with Tubal Pregnancy. C. U. v. Klein.—p. 1001.
Id. R. Meyer.—p. 1007.
Transperitoneal Cervical Cesarean Section with Premature Separation of the Placenta and Contracted Pelvis. D. Eberle.—p. 1010.

The Other Tube with Tubal Pregnancy.—Klein discusses the best method for preventing further conception in operating for tubal pregnancy, saying that simple ligation of the other tube does not accomplish this nor even excision of a piece of the tube. He has had cases of pregnancy later after both these procedures, and he describes a case of a second tubal pregnancy in the other tube which had been ligated at the first operation. The changes in the tube in consequence of the ligation had evidently afforded a predisposition for embedding of an ovum in the tube. Hence he advises in operating for tubal pregnancy to leave the other tube unmolested, unless time can be taken to render it permanently impermeable, by excision and burying the stump in the uterus wall. Anything less than this may actually invite tubal pregnancy later. If it is deemed best to shut off the other tube, he advises Madiener's method as the most promising of the rapid procedures, that is, to shut off with ligatures a crushed loop of the tube. Klein's experience with eighty cases of extra-uterine pregnancy includes thirty-two in which sterilization was attempted.

Dec 27, 1919, **43**, No. 52

*Eclampsia and the War. W. Gessner.—p. 1033.
Rieck's Resection of the Uterus. D. Pulvermacher.—p. 1036.

Eclampsia and Wartime Conditions.—Gessner states that the official statistics for Baden show a proportion of from 1.5 to 2 cases of puerperal eclampsia per thousand births between 1910 and 1916, inclusive. In 1917 the births numbered only 29,779, in comparison to the 60,621 in 1914, but the cases of eclampsia showed a still greater proportional decline, there being only 0.8 cases per thousand births. Baden is the only one of the German states that has compiled statistics on eclampsia, but various obstetricians have commented on the proportional drop in the number of cases of eclampsia. At the Hannover maternity eclampsia dropped from 25 cases in 1913 to 23, 13, 10 and 7 during the years of the war. He ascribes this decline in eclampsia to the women's working and exercising more under war conditions rather than to the wartime restrictions in diet, though the latter helped to combat the dangerous accumulation of fat. If the lack of fat and protein were responsible for the falling off of the cases of eclampsia, then cows would never have eclampsia. But cows do have eclampsia, he says, because they are phlegmatic and lazy, and this allows fat to accumulate. As soon as the troops scattered to their homes and the women ceased to be active breadwinners, the old conditions returned, so that the factors keeping down eclampsia no longer prevail. There is every reason to expect, he reiterates, that the eclampsia curve will rise and will never again touch such a low point as in 1918.

The obesity resulting from thyroid or pituitary deficiency was not modified by war conditions, and women with this did not grow thin during the war. Pregnant women of this "fat anemia" type are peculiarly predisposed to eclampsia unless they are given thyroid or pituitary treatment in time. He adds that the war experiences have demonstrated on a huge scale that women exercising and working to the last, and living on a scanty diet, have shorter and easier labor because there are no hindering subperitoneal layers of fat, as under other conditions, and the children are smaller. He explains that the reason why there were any cases of eclampsia during these recent years was that women of means were not obliged to work, and the extensive contraband trade lessened the dietary restrictions for many women.

Zentralblatt für innere Medizin, Leipzig

Dec. 27, 1919, **40**, No. 52

*Effect of War Undernutrition on the Bones. A. Koepchen.—p. 961.

War Pathologic Conditions in Bones.—Koepchen comments on the reports which came in first from Vienna, in the spring of 1919, on the peculiar endemic pathologic condition in the bones, resembling rachitis or osteomalacia. Reports soon followed from other points in Germany and Austria, Tübingen, Frankfort, Breslau, Bonn and Dresden. In his own experience, in the Rhine-Westphalia district, he encountered twenty cases in a few weeks, all in men except three, and inquiry elicited a large number of similar histories throughout the region. All were in young people, and all were of the poorer classes. The combination of severe pains in the bones, edema and a hemorrhagic tendency, and the characteristic light roentgen shadows of the bones and the endemic character, with negative findings in other respects, distinguish this war osteopathy. Influenza cannot be incriminated, as nothing of the kind seems to have been observed in the countries of the Allies, or after preceding epidemics of influenza. It is probably the result of a qualitative starvation of bone tissue, from chronic lack of certain necessary food elements. As he was unable to obtain cod liver oil, he gave merely phosphorus and calcium and found this effectual, the pains in the bones becoming attenuated in a few

days as a rule, only a few not feeling the benefit for a week or two. He cites nineteen reports on the subject in German-Austrian journals.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Oct. 25, 1919, **2**, No. 17

*Deformity of Chest from Asthma. A. A. H. van den Bergh.—p. 1245.
A Practical Stomach Pump. H. Wigger Boelens.—p. 1251.
*Asphyxia of the Newly Born. P. J. Mink.—p. 1253.
*Colic from Acute Angioneurotic Edema. J. H. Landwehr.—p. 1259.

The Tetrahedron Chest.—Van den Bergh says that he has not found any reference in the textbooks to the malformation of the chest which he describes with illustrations. It suggests a solid with four sides, each an equilateral triangle, the chest projecting in a peak between the nipples. His five patients with this deformity had suffered since childhood from attacks resembling severe asthma, and the strain from these attacks explains the protrusion of the chest and its final persistence in this pyramidal shape. There was no history of rachitis in any instance. One of the patients was a man of 31 and another a boy of 11.

Asphyxia of the Newly Born.—Mink does not accept Kouwer's theory in regard to intra-uterine movements of the fetal respiratory muscles. He insists that the fetal air passages are collapsed, and there can be no lumen. The glottis and the nostrils are also closed. The small arteries are contracted also, as is inevitable when there is no respiration. This is an additional factor in the anemia of the central nervous system. Other factors are the pressure on the head and chest in the birth passages. Respiration is inaugurated, he explains, by the sinking of the diaphragm. The traction from this pulls on the trachea and opens it, and this in turn pulls on the glottis and opens it and the nostrils. The respiration releases the arterioles from compression; they dilate, and blood streams to the respiration center, and the latter then takes charge of the respiration process. He reiterates that when the ordinary stimuli from the mechanical and other changes after delivery are inadequate, tickling the nasal mucosa might prove a potent means to act on the respiration center. As it is vitally important to supply the respiration center with blood, he advises not to cut the cord until after this stimulus has been applied to the nose. Very little time is lost by this, while the mother's blood may turn the scale. If not, the cord can then be cut and the Schultze swinging started. The swinging is merely, he thinks, a strong stimulus to the skin, and irritating the nasal mucosa is an equally potent stimulus. The great importance of this stimulation of the nasal mucosa is best appreciated by comparing the normal nose breathing with breathing through the mouth or tracheal cannula. The lack of the normal stimulus from the nose may be one of the causes of the asphyxia. The excitability of the respiration center at birth may be enough to start respiration, but may not be enough to maintain it when the normal stimulation from the nose is lacking.

Acute Angioneurotic Edema.—In the case reported by Landwehr in a previously healthy woman there was fleeting edema at various points, but each time the edema subsided in about half an hour, not leaving a trace. Eyelids, lips, chin, arms, hands and feet were affected in turn, and finally sudden stormy symptoms indicated that the fleeting angioneurotic edema had attacked the bile ducts, simulating actual gallstone colic. This has occurred on two occasions to date. The swelling of the mucosa of the bile ducts obstructs the flow of bile, and the retention causes the colic pains the same as from retention of other origin. The case is still under treatment. Arsenic, strychnin and quinin have been recommended, with regulation of the bowels and a milk-vegetable diet. The first signs of the edema were noted about four months before date of writing.

Nov. 1, 1919, **2**, No. 18

*Scarlatinal Nephritis. M. A. Duyvis.—p. 1339.
The Anti-Birth Control Congress. F. Hers.—p. 1344.
*Correction of Deformed Noses. E. W. de Flines.—p. 1353.
*Vasotomy. Scheffelaar Klots.—p. 1356.
*Triplet Birth with One Living Child. A. ten Doesschate.—p. 1357.
*Abscess in Lung after Tonsillectomy. H. Burger.—p. 1359.

Prognosis of Scarlatinal Nephritis.—Duyvis protests that scarlatinal nephritis does not altogether deserve the bad reputation it has acquired Recent reexamination of 30 nephritis patients from the epidemic of scarlet fever at Amsterdam in 1906, showed normal kidney functioning in 21 cases The blood pressure was normal in 5 others who presented intermittent albuminuria, including one suspected of tuberculosis. In 4 others the blood pressure was above normal, and there were traces of albumin in the urine. All of the 30 were in good general health. Not one of the 30 had actual nephritis, and none had died from nephritis in the interim.

Correction of Crooked Nose.—De Flines gives illustrations before and after his correction of "rhinodystasis," congenital or acquired, and describes his technic for this "rhinorthosis" by cutting a wedge-shaped piece out of the upper jaw, on the broader side of the nose, working through the nose and subcutaneously, so there is no scar. The apex of the triangular wedge resected points upward, reaching nearly to the orbit. The bone on the other side is reached in the same way but merely a linear incision is made on this side, slanting from the orbit outward, and the same length as the corresponding side of the wedge on the other side. The nose is then pushed over into its normal place. In doing this, the bony connection with the frontal bone has to be wrenched apart or fractured. He does this with the thumbs both on the small side, and has always succeeded without using instruments. The nose is then modeled, and fastened in its new position with a stout silk thread passed through a hole in the jaw on the broad side and in and out through two holes in the septum, thus pulling the whole nose over into its proper place. He operates under local anesthesia throughout, as also when he merely removes redundant bone to transform an ugly hook nose into an esthetic profile.

Vasotomy.—Klots merely describes this operation "as done by the Americans."

Triplet Birth.—A viable 8 months girl was delivered and then two dead male twins from a second ovum at about the fifth month. This case confirms the assumption that triplets are generally from two ova.

Lung Abscess Following Tonsillectomy.—Burger reviews the literature that has accumulated on this sequel of tonsillectomy since Manges first called attention to it in 1916. He thinks that the possibility of blood-borne infection cannot be excluded, but emphasizes that lack of preparation for the operation may also be a factor. Recovery after long convalescence is usual, but operative intervention has sometimes been necessary, opening and draining the abscess, or resection of the lung. Cott lauds artificial pneumothorax as the most effectual measure in treatment. Burger remarks in conclusion that the data cited confirm the necessity for remaining in bed under medical supervision for a few days after tonsillectomy; also the necessity for the employment of local anesthesia for older children and adults, and in young children the special precautions which every general anesthetic should impose.

Hygiea, Stockholm

Dec. 16, 1919, **81**, No. 23

*Mammary Cancer. A. Neander.—p. 937.

Mammary Cancer.—Neander analyzes the experiences at Stockholm with 427 operations for mammary cancer between 1900 and 1914. The 330 radical operations were followed by recurrence in or near the site of the cancer in 165 cases, and only 19 per cent. were living free from recurrence after three years; 28 patients were thus apparently definitely cured. After five years these figures were 16.8 per cent. and 23. The outcome is not known in 84 cases. The immediate operative mortality was 2.1 per cent. He reiterates that 75 per cent. at least of all pathologic conditions in the female breast after the age of 30 are malignant. He discusses the arguments for and against evacuation of the supraclavicular fossa, saying that the 15 patients on whom this was done all died from cancer. Over 66 per cent. of all recurrences developed in or near the old site.